

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT: Andrew C. Braisted  
J. Kevin Judice  
Robert S. McDowell  
J. Christopher Phelan  
Melissa A. Starovasnik  
James A. Wells

(ii) TITLE OF INVENTION: Constrained Helical Peptides and  
Methods of Making Same

(iii) NUMBER OF SEQUENCES: 113

(iv) CORRESPONDENCE ADDRESS:

(A) ADDRESSEE: Genentech, Inc.  
(B) STREET: 1 DNA Way  
(C) CITY: South San Francisco  
(D) STATE: California  
(E) COUNTRY: USA  
(F) ZIP: 94080

(v) COMPUTER READABLE FORM:

(A) MEDIUM TYPE: 3.5 inch, 1.44 Mb floppy disk  
(B) COMPUTER: IBM PC compatible  
(C) OPERATING SYSTEM: PC-DOS/MS-DOS  
(D) SOFTWARE: WinPatin (Genentech)

(vi) CURRENT APPLICATION DATA:

(A) APPLICATION NUMBER: Unassigned  
(B) FILING DATE: 05-Nov-1997  
(C) CLASSIFICATION:

(viii) ATTORNEY/AGENT INFORMATION:

(A) NAME: Torchia, PhD., Timothy E.  
(B) REGISTRATION NUMBER: 36,700  
(C) REFERENCE/DOCKET NUMBER: P1005R2

(ix) TELECOMMUNICATION INFORMATION:

(A) TELEPHONE: 650/225-8674  
(B) TELEFAX: 650/952-9881

(2) INFORMATION FOR SEQ ID NO:1:

051501 051501 051501

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 36 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear  
 (ii) MOLECULE TYPE: DP178

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

```
Tyr Thr Ser Leu Ile His Ser Leu Ile Glu Glu Ser Gln Asn Gln  
1          5           10          15  
  
Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala  
                20             25              30  
  
Ser Leu Trp Asn Trp Phe  
            35   36
```

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

Tyr	Thr	Ser	Leu	Ile	His	Ser	Leu	Ile	Glu	Glu	Ser	Gln	Asn	Gln
1				5					10					15
Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp			
				20					25		27			

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

Tyr Thr Ser Leu Ile His Ser Leu Ile Xaa Glu Ser Gln Asn Gln  
1 5 10 15  
Gln Xaa Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp

## (2) INFORMATION FOR SEQ ID NO:4:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Tyr Thr Xaa Leu Ile His Ser Leu Ile Xaa Glu Ser Gln Asn Gln  
 1 5 10 15

Gln Xaa Lys Asn Glu Gln Glu Leu Xaa Glu Leu Asp  
 20 25 27

## (2) INFORMATION FOR SEQ ID NO:5:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 27 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Tyr Thr Ser Leu Ile His Ser Xaa Ile Glu Glu Ser Gln Asn Xaa  
 1 5 10 15

Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp  
 20 25 27

## (2) INFORMATION FOR SEQ ID NO:6:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
 1 5 10 15

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Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	
				20					25					30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Xaa	
				35					40					45	
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	
				50					55					60	
Met	Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	
				65					70					75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	
				80					85					90	
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	
				95					100					105	
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	
				110					115					120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	
				125					130					135	
Thr	Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	
				140					145					150	
Xaa	Xaa	Ile	Trp	Xaa	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	
				155					160					165	
Ile	Asp	Asn	Tyr	Thr	Xaa	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	
				170					175					180	
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	
				185					190					195	
Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Xaa	Ile	Thr	Asn	Trp	Leu	
				200					205					210	
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	
				215					220					225	
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	
				230					235					240	

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Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Xaa	Leu	Pro	Ala	Pro
				245					250					255

Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly
				260					265				269

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 268 amino acids

(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(ii) MOLECULE TYPE: HIV-JRCSF

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35					40					45
Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Arg	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu
				65					70					75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu
				80					85					90
Ala	Gln	Gln	His	Met	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln
				95					100					105
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln
				110					115					120
Gln	Leu	Met	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr
				125					130					135
Thr	Ala	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asp
				140					145					150

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Ser	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Lys	Glu	Ile	155	160	165
Glu	Asn	Tyr	Thr	Asn	Thr	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180
Ile	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Gly	Ile	Thr	Lys	Trp	Leu	Trp	200	205	210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu	215	220	225
Arg	Ile	Val	Phe	Ser	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	230	235	240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Leu	Pro	Ala	Thr	Arg	245	250	255
Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly			260	265	268

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	35	40	45	
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	

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Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu		65	70	75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu		80	85	90
Ala	Gln	Gln	Arg	Met	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln		95	100	105
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Gly	Asp	Gln		110	115	120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr		125	130	135
Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asp		140	145	150
Arg	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	Ile		155	160	165
Asp	Asn	Tyr	Thr	Ser	Glu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	Gln		170	175	180
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys		185	190	195
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Lys	Trp	Leu	Trp		200	205	210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu		215	220	225
Arg	Leu	Val	Phe	Thr	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln		230	235	240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Leu	Pro	Ala	Pro	Arg		245	250	255
Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly				260	265	268

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

005436 051504

(A) LENGTH: 268 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu	35	40	45	
Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Arg	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105	
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	Gln	110	115	120	
Gln	Leu	Leu	Glu	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	125	130	135	
Thr	Thr	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asn	140	145	150	
Gln	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	Ile	155	160	165	
Asp	Asn	Tyr	Thr	Ser	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180	
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195	

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Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asn	Ile	Thr	Asn	Trp	Leu	Trp
				200					205					210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu
				215					220					225
Arg	Ile	Val	Phe	Ser	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln
				230					235					240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Arg	Leu	Pro	Ala	Arg	Arg
				245					250					255
Glu	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly		
				260				265				268		

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Gly	Gly	Gly	Asn	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5				10						15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20				25						30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu
				35				40						45
Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50				55						60
Gly	Ala	Ala	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu
				65				70						75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Met	Ala	Ile	Glu
				80				85						90
Ala	Gln	Gln	His	Met	Leu	Glu	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln
				95				100						105

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Leu Gln Ala Arg Val Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln  
 110 115 120  
 Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr  
 125 130 135  
 Thr Ala Val Pro Trp Asn Ala Ser Trp Ser Asn Lys Ser Leu Ser  
 140 145 150  
 Asp Ile Trp Asp Asn Met Thr Trp Met Glu Trp Glu Arg Glu Ile  
 155 160 165  
 Asp Asn Tyr Thr Asn Leu Ile Tyr Ser Leu Ile Glu Asp Ser Gln  
 170 175 180  
 Ile Gln Gln Glu Lys Asn Glu Lys Glu Leu Leu Glu Leu Asp Lys  
 185 190 195  
 Trp Ala Ser Leu Trp Asn Trp Phe Asn Ile Thr Asn Trp Leu Trp  
 200 205 210  
 Tyr Ile Lys Ile Phe Ile Met Ile Val Gly Gly Leu Ile Gly Leu  
 215 220 225  
 Arg Ile Val Phe Ala Val Leu Ser Ile Val Asn Arg Val Arg Gln  
 230 235 240  
 Gly Tyr Ser Pro Leu Ser Phe Gln Thr Arg Leu Pro Gly Arg Arg  
 245 250 255  
 Gly Pro Asp Arg Pro Glu Gly Ile Glu Glu Glu Gly Gly  
 260 265 268

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 267 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Gly Gly Gly Asn Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
 1 5 10 15

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Tyr	Lys	Val	Val	Lys	Ile	Glu	Leu	Leu	Gly	Val	Ala	Pro	Thr	Lys	
				20					25					30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	
				35					40					45	
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	
				50					55					60	
Gly	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu	Ser	
				65					70					75	
Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	Gly	
				80					85					90	
Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	Leu	
				95					100					105	
Gln	Ala	Arg	Ile	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	Gln	
				110					115					120	
Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	Thr	
				125					130					135	
Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Glu	Glu	
				140					145					150	
Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	Ile	Asp	
				155					160					165	
Asn	Tyr	Thr	Ser	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	Gln	Asn	
				170					175					180	
Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Gly	Leu	Asp	Lys	Trp	
				185					190					195	
Ala	Ser	Leu	Trp	Asn	Trp	Phe	Thr	Ile	Thr	Asn	Trp	Leu	Trp	Tyr	
				200					205					210	
Ile	Arg	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu	Arg	
				215					220					225	
Ile	Val	Phe	Thr	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	Gly	
				230					235					240	

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Tyr Ser Pro Leu Ser Phe Gln Thr Arg Leu Pro Ala Pro Arg Gly  
 245 250 255

Pro Asp Arg Pro Glu Gly Ile Glu Glu Glu Gly Gly  
 260 265 267

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Thr	35	40	45	
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Thr	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	110	115	120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135	
Thr	Thr	Thr	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu	140	145	150	

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Asp	Lys	Ile	Trp	Gly	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	155	160	165
Ile	Asp	Asn	Tyr	Thr	Ser	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	170	175	180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	185	190	195
Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asn	Ile	Thr	Asn	Trp	Leu	200	205	210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Thr	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Arg	Leu	Pro	Ser	Gln	245	250	255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	35	40	45	
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	

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Gly	Ala	Ala	Ala	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu	65	70	75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	Gln	110	115	120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	125	130	135
Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asn	140	145	150
Lys	Ile	Trp	Asp	Asn	Met	Thr	Trp	Ile	Glu	Trp	Asp	Arg	Glu	Ile	155	160	165
Asn	Asn	Tyr	Thr	Ser	Ile	Ile	Tyr	Ser	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Lys	Trp	Leu	Trp	200	205	210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu	215	220	225
Arg	Ile	Val	Phe	Ser	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	230	235	240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	Pro	Ser	Ser	Arg	245	250	255
Gly	Pro	Asp	Arg	Pro	Gly	Gly	Ile	Glu	Glu	Glu	Gly	Gly			260	265	268

(2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:

09354316 "051501"

(A) LENGTH: 268 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu	35	40	45	
Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105	
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	Gln	110	115	120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	125	130	135	
Thr	Thr	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asn	140	145	150	
Glu	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Lys	Trp	Glu	Arg	Glu	Ile	155	160	165	
Asp	Asn	Tyr	Thr	His	Ile	Ile	Tyr	Ser	Leu	Ile	Glu	Gln	Ser	Gln	170	175	180	
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Ala	Leu	Asp	Lys	185	190	195	

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Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Lys	Trp	Leu	Trp
				200					205					210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu
				215					220					225
Arg	Ile	Val	Phe	Val	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln
				230					235					240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	Pro	Ala	Gln	Arg
				245					250					255
Gly	Pro	Asp	Arg	Pro	Asp	Gly	Ile	Glu	Glu	Glu	Gly	Gly		
				260				265				268		

(2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 267 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5				10						15
Tyr	Lys	Val	Val	Thr	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20				25						30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Ala	Ile	Gly
				35				40						45
Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	Gly
				50				55						60
Ala	Ala	Ser	Val	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu	Ser
				65				70						75
Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	Ala
				80				85						90
Gln	Gln	His	Met	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	Leu
				95				100						105

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Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	Gln	110	115	120
Leu	Leu	Gly	Phe	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	Thr	125	130	135
Thr	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asp	Asp	140	145	150
Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Gln	Trp	Glu	Arg	Glu	Ile	Asp	155	160	165
Asn	Tyr	Thr	Ser	Leu	Ile	Tyr	Ser	Leu	Leu	Glu	Lys	Ser	Gln	Thr	170	175	180
Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	Trp	185	190	195
Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Asn	Trp	Leu	Trp	Tyr	200	205	210
Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu	Arg	215	220	225
Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	Gly	230	235	240
Tyr	Ser	Pro	Leu	Ser	Leu	Gln	Thr	Arg	Pro	Pro	Val	Pro	Arg	Gly	245	250	255
Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly				260	265	267

(2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 268 amino acids

(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5				10						15

Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	
				20					25					30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	
				35					40					45	
Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	
				50					55					60	
Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	
				65					70					75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	
				80					85					90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	
				95					100					105	
Leu	Gln	Ala	Arg	Ile	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	
				110					115					120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	
				125					130					135	
Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Glu	
				140					145					150	
Gln	Ile	Trp	Asn	His	Thr	Thr	Trp	Met	Glu	Trp	Asp	Arg	Glu	Ile	
				155					160					165	
Asn	Asn	Tyr	Thr	Ser	Leu	Ile	His	Ser	Leu	Ile	Glu	Glu	Ser	Gln	
				170					175					180	
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	
				185					190					195	
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asn	Ile	Thr	Asn	Trp	Leu	Trp	
				200					205					210	
Tyr	Ile	Lys	Leu	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu	
				215					220					225	
Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	
				230					235					240	

Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	Pro	Thr	Pro	Arg
				245					250					255

Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly
				260				265				268

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35					40					45
Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Arg	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu
				65					70					75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu
				80					85					90
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln
				95					100					105
Leu	Gln	Ala	Arg	Ile	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln
				110					115					120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr
				125					130					135
Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Glu
				140					145					150

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(i) SEQUENCE CHARACTERISTICS:

- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35					40					45
Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60



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Gly	Cys	Thr	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	
				65					70					75	
Ser	Asp	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	
				80					85					90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	
				95					100					105	
Leu	Gln	Ala	Arg	Ile	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	
				110					115					120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	
				125					130					135	
Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Glu	
				140					145					150	
Gln	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Asp	Arg	Glu	Ile	
				155					160					165	
Asn	Asn	Tyr	Thr	Ser	Leu	Ile	His	Ser	Leu	Ile	Glu	Glu	Ser	Gln	
				170					175					180	
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	
				185					190					195	
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asn	Ile	Thr	Asn	Trp	Leu	Trp	
				200					205					210	
Tyr	Ile	Lys	Leu	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu	
				215					220					225	
Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	
				230					235					240	
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	Pro	Ile	Pro	Arg	
				245					250					255	
Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly			
				260					265			268			

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 268 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Thr	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	35	40	45	
Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105	
Leu	Gln	Ala	Arg	Ile	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	110	115	120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	125	130	135	
Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Glu	140	145	150	
Gln	Phe	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Asp	Arg	Glu	Ile	155	160	165	
Asn	Asn	Tyr	Thr	Ser	Leu	Ile	His	Ser	Leu	Ile	Asp	Glu	Ser	Gln	170	175	180	
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195	

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Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asn	Ile	Thr	Asn	Trp	Leu	Trp
				200					205					210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu
				215					220					225
Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln
				230					235					240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	Pro	Asn	Arg	Gly
				245					250					255
Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly		
				260				265				268		

(2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5				10						15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20				25						30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ala
				35				40						45
Ile	Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr
				50				55						60
Met	Gly	Ala	Val	Ala	Leu	Thr	Leu	Thr	Val	Gln	Thr	Arg	Gln	Leu
				65				70						75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile
				80				85						90
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys
				95				100						105

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Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp
				110					115					120
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys
				125					130					135
Thr	Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu
				140					145					150
Asp	Lys	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu
				155					160					165
Ile	Asp	Asn	Tyr	Thr	Asn	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser
				170					175					180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Lys	Asp	Leu	Leu	Glu	Leu	Asp
				185					190					195
Thr	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Asn	Trp	Leu
				200					205					210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Ile	Gly	Gly	Leu	Ile	Gly
				215					220					225
Leu	Arg	Ile	Val	Phe	Thr	Ile	Leu	Ser	Leu	Val	Asn	Arg	Val	Arg
				230					235					240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Arg	Phe	Pro	Val	Pro
				245					250					255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly	
				260					265				269	

- (2) INFORMATION FOR SEQ ID NO:21:

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
1 5 10 15

Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	
				20					25					30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ala	
				35					40					45	
Leu	Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	
				50					55					60	
Met	Gly	Ala	Ala	Ser	Met	Ala	Leu	Thr	Val	Gln	Thr	Arg	Gln	Leu	
				65					70					75	
Met	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Lys	Ala	Ile	
				80					85					90	
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	
				95					100					105	
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	
				110					115					120	
Gln	Gln	Leu	Leu	Arg	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	
				125					130					135	
Thr	Thr	Thr	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	
				140					145					150	
Asp	Lys	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	
				155					160					165	
Ile	Asp	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	
				170					175					180	
Gln	Ile	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	
				185					190					195	
Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Lys	Trp	Leu	
				200					205					210	
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	
				215					220					225	
Leu	Arg	Ile	Val	Phe	Thr	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	
				230					235					240	

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Asp	Met	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	155	160	165
Ile	Glu	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	170	175	180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Asp	Leu	Leu	Ala	Leu	Asp	185	190	195
Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Ser	Asn	Trp	Leu	200	205	210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Thr	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	Pro	Ala	Pro	245	250	255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Gly	Gly	Gly	Asn	Met	Arg	Asp	Asn	Trp	Arg	Ser	Lys	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Lys	Lys	Arg	Ala	Val	Gly	Thr	35	40	45	
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	

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(A) LENGTH: 269 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu	35	40	45	
Ile	Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	110	115	120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Val	Cys	125	130	135	
Thr	Thr	Thr	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	140	145	150	
Asn	Gln	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	155	160	165	
Ile	Asp	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Arg	Leu	Ile	Glu	Glu	Ser	170	175	180	
Gln	Asn	Gln	Gln	Glu	Gln	Asn	Glu	Gln	Asp	Leu	Leu	Lys	Leu	Asp	185	190	195	

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Thr	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Ser	Ile	Thr	Lys	Trp	Leu
				200					205					210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly
				215					220					225
Leu	Arg	Ile	Ile	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg
				230					235					240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Leu	Pro	Ala	Pro
				245					250					255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly	
				260					265					269

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Gly	Gly	Gly	Asn	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu
				35					40					45
Leu	Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr
				50					55					60
Met	Gly	Ala	Arg	Ser	Met	Ala	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu
				65					70					75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile
				80					85					90
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys
				95					100					105

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Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	110	115	120
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135
Thr	Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Met	140	145	150
Asp	Met	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	155	160	165
Ile	Asp	Asn	Tyr	Thr	Ser	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	170	175	180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asn	185	190	195
Lys	Trp	Glu	Asn	Leu	Trp	Ser	Trp	Phe	Asp	Ile	Ser	Asn	Trp	Leu	200	205	210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Ser	Val	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Arg	Leu	Pro	Ala	Pro	245	250	255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5				10						15

Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Thr	Leu	35	40	45
Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60
Gly	Ala	Arg	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	65	70	75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	110	115	120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	125	130	135
Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asp	140	145	150
Gln	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	Ile	155	160	165
Asp	Asn	Tyr	Thr	Asn	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Ser	Lys	Trp	Leu	Trp	200	205	210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu	215	220	225
Arg	Ile	Val	Phe	Thr	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	230	235	240

Gly Tyr Ser Pro Leu Ser Phe Gln Thr Arg Phe Pro Ala Pro Arg  
 245 250 255

Gly Pro Asp Arg Pro Glu Gly Ile Glu Glu Gly Gly  
 260 265 268

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 267 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Ala	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Arg	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Met	35	40	45	
Leu	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Arg	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	110	115	120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135	
Thr	Thr	Thr	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	140	145	150	

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Asn	Glu	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Gln	Trp	Glu	Arg	Glu
				155					160					165
Ile	Asp	Asn	Tyr	Thr	His	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser
				170					175					180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp
				185					190					195
Lys	Trp	Leu	Trp	Ser	Trp	Phe	Ser	Ile	Thr	Asn	Trp	Leu	Trp	Tyr
				200					205					210
Ile	Arg	Ile	Phe	Ile	Ile	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu	Arg
				215					220					225
Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	Gly
				230					235					240
Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Arg	Leu	Pro	Thr	Gln	Arg	Gly
				245					250					255
Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly			
				260					265		267			

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Ala	Gly	Gly	Asn	Met	Lys	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Val
				35					40					45
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr
				50					55					60

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Met Gly Ala Ala Ser Ile Thr Leu Thr Val Gln Ala Arg Lys Leu	65	70	75
Leu Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile	80	85	90
Glu Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys	95	100	105
Gln Leu Gln Ala Arg Val Leu Ala Val Glu Arg Tyr Leu Arg Asp	110	115	120
Gln Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys	125	130	135
Thr Thr Thr Val Pro Trp Asn Thr Ser Trp Ser Asn Lys Ser Leu	140	145	150
Asp Lys Ile Trp Asn Asn Met Thr Trp Met Glu Trp Glu Arg Glu	155	160	165
Ile Asp Asn Tyr Thr Ser Leu Ile Tyr Thr Leu Leu Glu Glu Ser	170	175	180
Gln Asn Gln Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp	185	190	195
Lys Trp Ala Ser Leu Trp Asn Trp Phe Ser Ile Thr Asn Trp Leu	200	205	210
Trp Tyr Ile Arg Ile Phe Ile Met Ile Val Gly Gly Leu Ile Gly	215	220	225
Leu Arg Ile Ile Phe Ala Val Leu Ser Ile Val Asn Arg Val Arg	230	235	240
Gln Gly Tyr Ser Pro Leu Ser Phe Gln Thr Leu Ile Pro Ala Gln	245	250	255
Arg Gly Pro Asp Arg Pro Glu Gly Ile Glu Glu Gly Gly Gly	260	265	269

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:

003436 0501

(A) LENGTH: 269 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Met	35	40	45	
Leu	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Thr	Ser	Met	Ala	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	
Lys	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	
Gln	Leu	Gln	Ala	Arg	Ile	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	110	115	120	
Gln	Gln	Leu	Leu	Gly	Phe	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135	
Thr	Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Thr	Leu	140	145	150	
Asp	Gln	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Asp	Arg	Glu	155	160	165	
Ile	Asp	Asn	Tyr	Thr	His	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	170	175	180	
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Gln	Gln	Glu	Leu	Leu	Gln	Leu	Asp	185	190	195	

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Lys	Trp	Ala	Ser	Leu	Trp	Thr	Trp	Ser	Asp	Ile	Thr	Lys	Trp	Leu
				200					205					210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly
				215					220					225
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg
				230					235					240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Leu	Pro	Asn	Pro
				245					250					255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Thr	Glu	Glu	Gly	Gly	Gly	
				260					265					269

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Ile	Lys	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Lys
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35					40					45
Val	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr
				50					55					60
Met	Gly	Ala	Val	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu
				65					70					75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile
				80					85					90
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys
				95					100					105

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Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp
				110					115					120
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys
				125					130					135
Thr	Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu
				140					145					150
Glu	Asp	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Gln	Trp	Glu	Arg	Glu
				155					160					165
Ile	Asp	Asn	Tyr	Thr	Asn	Thr	Ile	Tyr	Thr	Leu	Leu	Glu	Glu	Ser
				170					175					180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp
				185					190					195
Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Ser	Ile	Thr	Asn	Trp	Leu
				200					205					210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly
				215					220					225
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg
				230					235					240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Arg	Leu	Pro	Val	Pro
				245					250					255
Arg	Gly	Pro	Asp	Arg	Pro	Asp	Gly	Ile	Glu	Glu	Glu	Gly	Gly	
				260					265					269

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5				10						15

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Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Lys	
				20					25					30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	
				35					40					45	
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	
				50					55					60	
Met	Gly	Ala	Arg	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Lys	Leu	
				65					70					75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	
				80					85					90	
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	
				95					100					105	
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	
				110					115					120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	
				125					130					135	
Thr	Thr	Ala	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Met	
				140					145					150	
Glu	Asp	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Gln	Trp	Glu	Lys	Glu	
				155					160					165	
Ile	Asp	Asn	Tyr	Thr	Asn	Thr	Ile	Tyr	Thr	Leu	Leu	Glu	Glu	Ser	
				170					175					180	
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	
				185					190					195	
Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asn	Ile	Thr	Asn	Trp	Leu	
				200					205					210	
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	
				215					220					225	
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Val	Val	Asn	Arg	Val	Arg	
				230					235					240	

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Gln Gly Tyr Ser Pro Leu Ser Phe Gln Thr Arg Leu Pro Thr Pro  
245 250 255

Arg Gly Pro Asp Arg Pro Asp Gly Ile Glu Glu Glu Gly Gly  
260 265 269

(2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Gly	Gly	Gly	Asn	Met	Arg	Asp	Asn	Trp	Arg	Asn	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Met	35	40	45	
Leu	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Arg	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	110	115	120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135	
Thr	Thr	Thr	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Thr	Leu	140	145	150	

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Asp Gln Ile Trp Asn Asn Met Thr Trp Met Glu Trp Glu Arg Glu  
155 160 165

Ile Asp Asn Tyr Thr Ser Leu Ile Tyr Thr Leu Ile Glu Gln Ser  
170 175 180

Gln Asn Gln Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp  
185 190 195

Lys Trp Ala Ser Leu Trp Ser Trp Tyr Asp Ile Ser Asn Trp Leu  
200 205 210

Trp Tyr Ile Lys Ile Phe Ile Met Ile Val Gly Gly Leu Ile Gly  
215 220 225

Leu Arg Ile Val Phe Ala Val Leu Ser Ile Val Asn Arg Val Arg  
230 235 240

Gln Gly Tyr Ser Pro Leu Ser Phe Gln Thr Leu Leu Pro Ala Thr  
245 250 255

Arg Gly Pro Arg Gln Pro Glu Glu Ile Glu Glu Glu Gly Gly  
260 265 269

(2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Gly Gly Gly Asn Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
1 5 10 15

Tyr Lys Val Val Arg Ile Glu Pro Leu Gly Val Ala Pro Thr Arg  
20 25 30

Ala Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Val Gly Thr  
35 40 45

Ile Gly Ala Met Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr  
50 55 60

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Met	Gly	Ala	Gly	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	His	Leu	65	70	75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	110	115	120
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135
Thr	Thr	Thr	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	140	145	150
Asn	Met	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Gln	Trp	Glu	Arg	Glu	155	160	165
Ile	Asp	Asn	Tyr	Thr	Gly	Ile	Ile	Tyr	Asn	Leu	Leu	Glu	Glu	Ser	170	175	180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	185	190	195
Lys	Trp	Ala	Asn	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Gln	Trp	Leu	200	205	210
Trp	Tyr	Ile	Arg	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	215	220	225
Leu	Lys	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	Pro	Ala	Pro	245	250	255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Gly	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:

0054816 051501

(A) LENGTH: 269 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Gly	Gly	Gly	Asn	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Arg	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Thr	35	40	45	
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Gly	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	
Asp	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	110	115	120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135	
Thr	Thr	Thr	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Met	140	145	150	
Asn	Gln	Ile	Trp	Asp	Asn	Leu	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	155	160	165	
Ile	Asp	Asn	Tyr	Thr	Ser	Ile	Ile	Tyr	Ser	Leu	Ile	Glu	Glu	Ser	170	175	180	
Gln	Asn	Gln	Gln	Gly	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	185	190	195	

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Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Asn	Trp	Leu	200	205	210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Thr	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	Pro	Thr	Pro	245	250	255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:35:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 268 amino acids

(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Gly	Gly	Gly	Asn	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Xaa	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	35	40	45	
Gly	Ala	Ala	Ser	Pro	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Xaa	Ala	Ala	Pro	Thr	Thr	Leu	Thr	Val	Gln	Pro	Arg	Gln	Leu	Leu	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105	

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Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	110	115	120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	125	130	135
Thr	Thr	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asp	140	145	150
Glu	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	Ile	155	160	165
Asn	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180
Xaa	Gln	Gln	Glu	Lys	Asn	Glu	Leu	Asp	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Asn	Xaa	Leu	Trp	200	205	210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu	215	220	225
Arg	Ile	Ile	Phe	Thr	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	230	235	240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	Pro	Xaa	Pro	Arg	245	250	255
Gly	Pro	Asp	Arg	Pro	Gly	Gly	Ile	Glu	Glu	Glu	Gly	Gly			260	265	268

(2) INFORMATION FOR SEQ ID NO:36:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 269 amino acids

(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---	---	----	----

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Tyr	Lys	Val	Val	Arg	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Arg	
				20					25					30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Thr	
				35					40					45	
Leu	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	
				50					55					60	
Met	Gly	Ala	Ala	Ser	Val	Ala	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	
				65					70					75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	
				80					85					90	
Glu	Ala	Gln	Gln	His	Met	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	
				95					100					105	
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Gly	Asp	
				110					115					120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	
				125					130					135	
Thr	Thr	Thr	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu	
				140					145					150	
Asp	Asp	Ile	Trp	Thr	Asn	Met	Thr	Trp	Met	Glu	Trp	Lys	Arg	Glu	
				155					160					165	
Ile	Asp	Asn	Tyr	Thr	Ser	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	
				170					175					180	
Gln	Arg	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	
				185					190					195	
Lys	Trp	Asp	Ser	Leu	Trp	Asn	Trp	Phe	Thr	Ile	Ser	Lys	Trp	Leu	
				200					205					210	
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Ala	Gly	Leu	Val	Gly	
				215					220					225	
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Lys	Val	Arg	
				230					235					240	

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Gln Gly Tyr Ser Pro Val Ser Phe Gln Thr Arg Leu Pro Ala Gln  
 245 250 255

Arg Gly Pro Asp Arg Pro Glu Glu Ile Glu Glu Glu Gly Gly  
 260 265 269

(2) INFORMATION FOR SEQ ID NO:37:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 269 amino acids

(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Pro	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Thr	35	40	45	
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Thr	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Arg	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	110	115	120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135	
Thr	Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	140	145	150	

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Asp	Lys	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu
				155					160					165
Ile	Asp	Asn	Tyr	Thr	Arg	Glu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser
				170					175					180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Leu	Glu	Leu	Leu	Glu	Leu	Asp
				185					190					195
Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Lys	Trp	Leu
				200					205					210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly
				215					220					225
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg
				230					235					240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Leu	Gln	Thr	Arg	Phe	Pro	Ala	Gln
				245					250					255
Arg	Gly	Pro	Gly	Gly	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly	
				260					265					269

(2) INFORMATION FOR SEQ ID NO:38:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 267 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Lys
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35					40					45
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60

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Gly	Ala	Ala	Ala	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu	65	70	75
Thr	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Lys	Ala	Ile	Glu	80	85	90
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	110	115	120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	125	130	135
Thr	Thr	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asp	140	145	150
Lys	Ile	Trp	Gly	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	Ile	155	160	165
Asp	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Thr	Ile	Thr	Asn	Trp	Leu	Trp	200	205	210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu	215	220	225
Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	230	235	240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Arg	Leu	Pro	Ala	Pro	Arg	245	250	255
Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly				260	265	267

(2) INFORMATION FOR SEQ ID NO:39:

(i) SEQUENCE CHARACTERISTICS:

00854816.051501

(A) LENGTH: 268 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

Gly	Gly	Gly	Asp	Met	Arg	Glu	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Phe	35	40	45	
Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105	
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	110	115	120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	125	130	135	
Thr	Asn	Val	Pro	Trp	Asn	Lys	Thr	Trp	Ser	Asn	Lys	Ser	Leu	Asp	140	145	150	
Gln	Ile	Trp	Gln	Asn	Met	Thr	Trp	Met	Gln	Trp	Glu	Arg	Glu	Ile	155	160	165	
Asp	Lys	Tyr	Thr	Asp	Val	Ile	Tyr	Thr	Leu	Ile	Gly	Glu	Ser	Gln	170	175	180	
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195	

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Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Gln	Trp	Leu	Trp
				200					205					210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	Leu
				215					220					225
Arg	Ile	Val	Phe	Ser	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln
				230					235					240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Arg	Leu	Pro	Ala	Ala	Arg
				245					250					255
Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly		
				260				265				268		

(2) INFORMATION FOR SEQ ID NO:40:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

Gly	Gly	Gly	Asn	Met	Lys	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Arg	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Arg
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Ala	Gly	Leu
				35					40					45
Gly	Val	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Ala	Ser	Ile	Ala	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu
				65					70					75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu
				80					85					90
Ala	Gln	Gln	His	Met	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln
				95					100					105

"09854916" 051504

Leu Gln Ala Arg Val Leu Ala Val Glu Arg Tyr Leu Arg Asp Gln  
 110 115 120  
 Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr  
 125 130 135  
 Thr Thr Val Pro Trp Asn Ala Ser Trp Ser Asn Lys Ser His Asp  
 140 145 150  
 Gln Ile Trp Gln Asn Met Thr Trp Met Gln Trp Glu Lys Glu Ile  
 155 160 165  
 Asp Asn Tyr Thr Ser Leu Ile Tyr Asn Leu Ile Glu Val Ser Gln  
 170 175 180  
 Asn Gln Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys  
 185 190 195  
 Trp Ala Ser Leu Trp Asn Trp Phe Asp Ile Thr Asn Trp Leu Trp  
 200 205 210  
 Tyr Ile Lys Ile Phe Ile Met Ile Val Gly Gly Leu Ile Gly Leu  
 215 220 225  
 Arg Ile Val Phe Ile Val Leu Ser Ile Val Asn Arg Val Arg Gln  
 230 235 240  
 Gly Tyr Ser Pro Leu Ser Phe Gln Thr His Leu Pro Ala Arg Arg  
 245 250 255  
 Gly Pro Asp Arg Pro Glu Gly Ile Glu Glu Glu Gly Gly  
 260 265 268

(2) INFORMATION FOR SEQ ID NO:41:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

Gly Gly Gly Asn Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
 1 5 10 15

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Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35					40					45
Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Ala	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu
				65					70					75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu
				80					85					90
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln
				95					100					105
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln
				110					115					120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr
				125					130					135
Thr	Thr	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asp
				140					145					150
Gln	Ile	Trp	Gly	Asn	Met	Thr	Trp	Met	Gln	Trp	Glu	Arg	Glu	Ile
				155					160					165
Asp	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	Gln
				170					175					180
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys
				185					190					195
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asn	Ile	Thr	Asn	Trp	Leu	Trp
				200					205					210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Ala	Gly	Leu	Val	Gly	Leu
				215					220					225
Arg	Val	Val	Phe	Ile	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln
				230					235					240

Tyr Lys Val Val Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Arg  
20 25 30

Ala Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Val Gly Ile  
35 40 45

Gly Ala Met Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
50 55 60

Gly Ala Ala Ser Leu Thr Leu Thr Val Gln Ala Arg Leu Leu Leu  
65 70 75

Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Glu  
80 85 90

Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
95 100 105

Leu Gln Ala Arg Val Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln  
110 115 120

Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr  
125 130 135

Thr	Thr	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asp
				140					145					150

Gln Ile Trp Gly Asn Met Thr Trp Met Gln Trp Glu Arg Glu Ile  
155 160 165

Asp Asn Tyr Thr Gly Leu Ile Tyr Thr Leu Ile Glu Glu Ser Gln  
170 175 180

Asn Gln Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys  
185 190 195

Trp Ala Ser Leu Trp Asn Trp Phe Asn Ile Thr Asn Trp Leu Trp  
200 205 210

Tyr Ile Lys Ile Phe Ile Met Ile Val Ala Gly Leu Val Gly Leu  
215 220 225

Arg Val Val Phe Ile Val Leu Ser Ile Val Asn Arg Val Arg Gln  
230 235 240

Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	His	Pro	Ala	Leu	Arg
				245					250					255

Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Gly	Gly
				260				265			268

(2) INFORMATION FOR SEQ ID NO:42:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35					40					45
Val	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr
				50					55					60
Met	Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu
				65					70					75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile
				80					85					90
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys
				95					100					105
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp
				110					115					120
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys
				125					130					135
Thr	Thr	Thr	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu
				140					145					150

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Ser	Glu	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Gln	Trp	Glu	Arg	Glu	155	160	165
Ile	Asp	Asn	Tyr	Thr	Ser	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Glu	Ser	170	175	180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	185	190	195
Lys	Trp	Ala	Gly	Leu	Trp	Asn	Trp	Phe	Glu	Ile	Thr	Asn	Trp	Leu	200	205	210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Val	Ser	Phe	Gln	Thr	His	Leu	Pro	Ala	Pro	245	250	255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ala	35	40	45	
Leu	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	

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Met	Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105
Gln	Leu	Gln	Ala	Arg	Ile	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	110	115	120
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135
Thr	Thr	Ala	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu	140	145	150
Glu	Lys	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	155	160	165
Ile	Asp	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Ser	Leu	Ile	Glu	Glu	Ser	170	175	180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Asp	Leu	Leu	Glu	Leu	Asp	185	190	195
Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asn	Ile	Thr	Lys	Trp	Leu	200	205	210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Leu	Pro	Ala	Gln	245	250	255
Arg	Gly	Pro	Asp	Arg	Pro	Gly	Gly	Ile	Glu	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:44:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 269 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Lys	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Val	35	40	45	
Leu	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	
Gln	Leu	Gln	Ala	Arg	Ile	Leu	Ala	Met	Glu	Arg	Tyr	Leu	Lys	Asp	110	115	120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135	
Thr	Thr	Ala	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu	140	145	150	
Glu	Lys	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	155	160	165	
Ile	Asp	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Ser	Leu	Ile	Gly	Glu	Ser	170	175	180	
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Asp	Leu	Leu	Glu	Leu	Asp	185	190	195	

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Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asn	Ile	Thr	Lys	Trp	Leu	200	205	210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Leu	Pro	Ala	Gln	245	250	255
Arg	Gly	Pro	Asp	Arg	Pro	Gly	Gly	Ile	Glu	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

Gly	Gly	Gly	Asp	Met	Lys	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Ser	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Val	35	40	45	
Leu	Gly	Ala	Met	Phe	Leu	Gly	Leu	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	
Glu	Ala	Gln	Gln	His	Leu	Ser	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	

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Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	110	115	120
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135
Pro	Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Arg	Ser	Leu	140	145	150
Gln	Tyr	Ile	Trp	Asn	Asn	Met	Thr	Trp	Ile	Glu	Trp	Glu	Arg	Glu	155	160	165
Ile	Asp	Asn	Tyr	Thr	Asp	Ile	Ile	Tyr	Ser	Leu	Ile	Glu	Lys	Ser	170	175	180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	185	190	195
Gln	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Ser	Ile	Thr	Lys	Trp	Leu	200	205	210
Trp	Tyr	Ile	Lys	Leu	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Ala	Ile	Leu	Ser	Ile	Val	Asn	Arg	Ala	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Leu	Pro	Ala	Pro	245	250	255
Arg	Gly	Leu	Asp	Arg	Pro	Glu	Gly	Ile	Gly	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---	---	----	----

Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Thr	35	40	45
Leu	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60
Met	Gly	Ala	Ala	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	65	70	75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	110	115	120
Arg	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Pro	Ile	Cys	125	130	135
Thr	Thr	Ser	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Lys	Ser	Leu	140	145	150
Glu	Gln	Ile	Trp	Asn	Asn	Met	Thr	Trp	Leu	Glu	Trp	Glu	Arg	Glu	155	160	165
Ile	Asp	Asn	Tyr	Thr	Ser	Leu	Ile	Tyr	Ser	Leu	Ile	Lys	Glu	Ser	170	175	180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Glu	Leu	Asp	185	190	195
Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asn	Ile	Thr	Glu	Trp	Leu	200	205	210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Thr	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	230	235	240

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Glu	Glu	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	155	160	165
Ile	Asn	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Thr	Leu	Ile	Glu	Gln	Ser	170	175	180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Glu	Leu	Leu	Ala	Leu	Asp	185	190	195
Thr	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Ser	Ile	Ser	Asn	Trp	Leu	200	205	210
Trp	Tyr	Ile	Arg	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Val	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Arg	Leu	Pro	Thr	Pro	245	250	255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:48:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Ile	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Thr	35	40	45	
Ile	Gly	Val	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	

Met	Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90
Lys	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Ile	Glu	Arg	Phe	Leu	Arg	Asp	110	115	120
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135
Thr	Thr	Thr	Val	Pro	Trp	Asn	Thr	Ser	Trp	Ser	Asn	Lys	Ser	Leu	140	145	150
Lys	Gln	Ile	Trp	Asp	Asn	Leu	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	155	160	165
Ile	Asp	Asn	Tyr	Thr	Gly	Ile	Ile	Phe	Asn	Leu	Ile	Glu	Glu	Ala	170	175	180
Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Asp	Leu	Leu	Glu	Leu	Asp	185	190	195
Lys	Trp	Ala	Gly	Leu	Trp	Asn	Trp	Phe	Ser	Ile	Thr	Asn	Trp	Leu	200	205	210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	215	220	225
Leu	Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	230	235	240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Leu	Pro	Thr	Pro	245	250	255
Arg	Gly	Pro	Asp	Arg	Pro	Glu	Gly	Thr	Gly	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:49:

(i) SEQUENCE CHARACTERISTICS:

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(A) LENGTH: 233 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Arg	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	35	40	45	
Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105	
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	Gln	110	115	120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	125	130	135	
Thr	Ala	Val	Pro	Trp	Asn	Ala	Ser	Trp	Ser	Asn	Lys	Ser	Leu	Asp	140	145	150	
Gln	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Gln	Trp	Glu	Arg	Glu	Ile	155	160	165	
Glu	Asn	Tyr	Thr	Ser	Leu	Ile	Tyr	Asn	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180	
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Asp	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195	

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Trp	Ala	Ser	Leu	Trp	Ser	Trp	Phe	Ser	Ile	Thr	Asn	Trp	Leu	Trp
				200					205					210
Tyr	Ile	Arg	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu
				215					220					225
Arg	Ile	Val	Phe	Ala	Val	Leu	Ser							
				230			233							

(2) INFORMATION FOR SEQ ID NO:50:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 233 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35					40					45
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu
				65					70					75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu
				80					85					90
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln
				95					100					105
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	Gln
				110					115					120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr
				125					130					135

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Thr Ala Val Pro Trp Asn Ser Ser Trp Ser Asn Lys Ser Leu Asp  
 140 145 150  
 Gln Ile Trp Asn Asn Met Thr Trp Met Gln Trp Glu Arg Glu Ile  
 155 160 165  
 Glu Asn Tyr Thr Ser Leu Ile Tyr Asn Leu Ile Glu Glu Ser Gln  
 170 175 180  
 Asn Gln Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys  
 185 190 195  
 Trp Ala Ser Leu Trp Asn Trp Phe Ser Ile Thr Asn Trp Leu Trp  
 200 205 210  
 Tyr Ile Lys Ile Phe Ile Ile Ile Val Gly Gly Leu Ile Gly Leu  
 215 220 225  
 Arg Ile Val Phe Ala Val Leu Ser  
 230 233

(2) INFORMATION FOR SEQ ID NO:51:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 233 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:51:

Ala Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
 1 5 10 15  
 Tyr Lys Val Ile Gln Ile Glu Pro Leu Gly Val Ala Pro Thr Lys  
 20 25 30  
 Ala Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Val Gly Ile  
 35 40 45  
 Gly Ala Val Leu Phe Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
 50 55 60  
 Gly Ala Ala Ser Leu Thr Leu Thr Val Gln Ala Arg Gln Leu Leu  
 65 70 75

105436 "91845350"

Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Glu  
 80 85 90  
 Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
 95 100 105  
 Leu Gln Ala Arg Val Leu Ala Leu Glu Arg Tyr Leu Lys Asp Gln  
 110 115 120  
 Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr  
 125 130 135  
 Thr Ala Val Pro Trp Asn Ala Ser Trp Ser Asn Lys Ser Leu Asn  
 140 145 150  
 Asp Ile Trp Asp Asn Met Thr Trp Met Gln Trp Asp Arg Glu Ile  
 155 160 165  
 Asn Lys Tyr Thr Asp Ser Ile Tyr Gln Leu Ile Glu Glu Ser Gln  
 170 175 180  
 Asn Gln Gln Glu Lys Asn Glu Gln Asp Leu Leu Lys Leu Asp Glu  
 185 190 195  
 Trp Ala Ser Leu Trp Asn Trp Phe Ser Ile Ser Lys Trp Leu Trp  
 200 205 210  
 Tyr Ile Lys Ile Phe Ile Met Ile Val Gly Gly Leu Val Gly Leu  
 215 220 225  
 Arg Ile Val Phe Ala Val Leu Ser  
 230 233

(2) INFORMATION FOR SEQ ID NO:52:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 105 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:52:

Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
 1 5 10 15

09854816 "051501"

Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Arg	Arg	Ala	Val	Gly	Ala	35	40	45
Leu	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60
Met	Gly	Ala	Ala	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Lys	Ala	Ile	80	85	90
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105

(2) INFORMATION FOR SEQ ID NO:53:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 105 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:53:

Gly	Gly	Gly	Asp	Met	Lys	Asp	Asn	Trp	Arg	Ser	Lys	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Thr	35	40	45	
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Ala	Ser	Ile	Thr	Leu	Met	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Arg	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	

09854816 051501



Glu Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys  
95 100 105

(2) INFORMATION FOR SEQ ID NO:54:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 105 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:54:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Arg	Arg	Ala	Val	Gly	Ala	35	40	45	
Leu	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Ala	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Lys	Ala	Ile	80	85	90	
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	

(2) INFORMATION FOR SEQ ID NO:55:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 105 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:55:

Gly	Gly	Gly	Asp	Met	Lys	Asp	Asn	Trp	Arg	Ser	Lys	Leu	Tyr	Lys	1	5	10	15
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---	---	----	----

05654816 051501

Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Thr	35	40	45
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60
Met	Gly	Ala	Ala	Ser	Ile	Thr	Leu	Met	Val	Gln	Ala	Arg	Gln	Leu	65	70	75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Arg	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90
Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105

(2) INFORMATION FOR SEQ ID NO:56:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 93 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:56:

Gly	Gly	Gly	Asn	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	35	40	45	
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Arg	Ser	Met	Thr	Leu	Thr	Val	Gln	Ala	Arg	Leu	Leu	Leu	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	

095436 0540

Ala Gln Gln  
93

(2) INFORMATION FOR SEQ ID NO:57:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 94 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:57:

Gly Gly Gly Asn Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
1 5 10 15  
Tyr Lys Val Val Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Arg  
20 25 30  
Ala Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Val Gly Ile  
35 40 45  
Gly Ala Val Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
50 55 60  
Gly Ala Arg Ser Met Thr Leu Thr Val Gln Ala Arg Leu Leu Leu  
65 70 75  
Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Glu  
80 85 90  
Ala Gln Gln His  
94

(2) INFORMATION FOR SEQ ID NO:58:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 79 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:58:

Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
1 5 10 15

Tyr Lys Val Val Arg Ile Glu Pro Leu Gly Ile Ala Pro Thr Arg  
                             20                            25                            30  
 Ala Lys Arg Arg Glu Val Gln Arg Glu Lys Arg Ala Val Gly Thr  
                             35                            40                            45  
 Leu Gly Ala Met Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr  
                             50                            55                            60  
 Met Gly Ala Ala Ser Val Ala Leu Thr Val Pro Leu Arg Arg Ile  
                             65                            70                            75  
 Arg Ser Cys Xaa  
                             79

(2) INFORMATION FOR SEQ ID NO:59:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 79 amino acids
  - (B) TYPE: Amino Acid
  - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:59:

Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
   1                            5                            10                            15  
 Tyr Lys Val Val Arg Ile Glu Pro Leu Gly Val Ala Pro Thr Lys  
                             20                            25                            30  
 Ala Lys Arg Arg Val Val Gln Gly Glu Lys Arg Ala Val Gly Thr  
                             35                            40                            45  
 Ile Gly Ala Met Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr  
                             50                            55                            60  
 Met Gly Ala Arg Ser Ile Thr Leu Thr Val Pro Leu Arg Arg Ile  
                             65                            70                            75  
 Arg Ser Cys Xaa  
                             79

(2) INFORMATION FOR SEQ ID NO:60:

- (i) SEQUENCE CHARACTERISTICS:

0954316 054504

(A) LENGTH: 79 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:60:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Arg	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Thr	35	40	45	
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Pro	Val	Arg	Arg	Ile	65	70	75	
Arg	Ser	Cys	Xaa												79			

(2) INFORMATION FOR SEQ ID NO:61:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 55 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:61:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Thr	35	40	45	
Ile	Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly						50	55		

0954816 051504

(2) INFORMATION FOR SEQ ID NO:62:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 55 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:62:

Gly Gly Gly Asn Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
1 5 10 15  
Tyr Lys Val Val Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Arg  
20 25 30  
Ala Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Ile Gly Thr  
35 40 45  
Ile Gly Ala Leu Phe Leu Gly Phe Leu Gly  
50 55

(2) INFORMATION FOR SEQ ID NO:63:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 54 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:63:

Gly Gly Gly Asn Met Lys Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
1 5 10 15  
Tyr Lys Val Val Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Arg  
20 25 30  
Ala Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Val Thr Met  
35 40 45  
Gly Ala Leu Phe Leu Gly Phe Leu Gly  
50 54

(2) INFORMATION FOR SEQ ID NO:64:

- (i) SEQUENCE CHARACTERISTICS:

09854816 "051501  
T054816 "051501

(A) LENGTH: 54 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:64:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5				10						15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg
				20				25						30
Ala	Lys	Arg	Arg	Val	Val	Gln	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu
				35				40						45
Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly						
				50				54						

(2) INFORMATION FOR SEQ ID NO:65:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 41 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:65:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5				10						15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Thr
				20				25						30
Ala	Lys	Arg	Arg	Val	Met	Gln	Arg	Glu	Lys	Arg				
				35				40	41					

(2) INFORMATION FOR SEQ ID NO:66:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:66:

09854816-051501

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Thr
				20					25					30
Ala	Lys	Arg	Arg											
				34										

(2) INFORMATION FOR SEQ ID NO:67:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 270 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:67:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Xaa
				35					40					45
Leu	Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr
				50					55					60
Met	Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu
				65					70					75
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile
				80					85					90
Glu	Ala	Gln	Gln	His	Leu	Leu	Lys	Leu	Thr	Val	Trp	Gly	Ile	Lys
				95					100					105
Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp
				110					115					120
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys
				125					130					135

095445 051504



Thr Thr Asn Val Pro Trp Asn Ser Ser	Trp Ser Asn Lys Ser Xaa
140	145 150
Gln Ser Xaa Ile Trp Asp Asn Met Thr	Trp Leu Gln Trp Asp Lys
155	160 165
Glu Ile Ser Asn Tyr Thr Xaa Ile Ile	Tyr Asn Leu Ile Glu Glu
170	175 180
Ser Gln Asn Gln Gln Glu Lys Asn Glu	Gln Asp Leu Leu Ala Leu
185	190 195
Asp Lys Trp Ala Asn Leu Trp Asn Trp	Phe Asp Ile Ser Asn Trp
200	205 210
Leu Trp Tyr Ile Xaa Ile Phe Ile Met	Ile Val Gly Gly Leu Ile
215	220 225
Gly Leu Arg Ile Val Phe Ala Val Leu	Ser Ile Ile Asn Arg Val
230	235 240
Arg Gln Gly Tyr Ser Pro Leu Ser Phe	Gln Thr Leu Thr Pro Asn
245	250 255
Pro Arg Xaa Pro Asp Arg Pro Gly Arg	Ile Glu Glu Glu Gly Gly
260	265 270

(2) INFORMATION FOR SEQ ID NO:68:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:68:

Thr Gly Gly Asn Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys
1 5 10 15
Tyr Lys Val Val Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Pro
20 25 30
Ala Lys Arg Arg Val Val Gln Arg Glu Lys Arg Ala Val Gly Ile
35 40 45

0054936 051601



(2) INFORMATION FOR SEQ ID NO:69:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 267 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:69:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Lys	Ser	Glu	Leu	Tyr	Lys	
1				5					10					15	
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	
				20					25					30	
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu	
				35					40					45	
Gly	Ala	Ile	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	
				50					55					60	
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	
				65					70					75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile	Glu	
				80					85					90	
Ala	Gln	Gln	His	Leu	Leu	Lys	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	
				95					100					105	
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Gln	Asp	Gln	
				110					115					120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	
				125					130					135	
Thr	Thr	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Lys	Ser	Gln	Glu	
				140					145					150	
Asp	Ile	Trp	Asn	Asn	Met	Thr	Trp	Leu	Gln	Trp	Glu	Lys	Glu	Ile	
				155					160					165	
Ser	Ser	Tyr	Thr	Gly	Ile	Ile	Tyr	Gln	Leu	Ile	Glu	Glu	Ser	Gln	
				170					175					180	

055416 051501

Asn	Gln	Gln	Glu	Lys	Asn	Glu	Leu	Asp	Leu	Leu	Ala	Leu	Asp	Lys	185	190	195
Trp	Ala	Asn	Leu	Asn	Trp	Phe	Asn	Ile	Ser	Asn	Trp	Leu	Trp	Tyr	200	205	210
Ile	Arg	Leu	Phe	Val	Ile	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu	Arg	215	220	225
Ile	Val	Phe	Thr	Val	Leu	Ser	Ile	Ile	Asn	Arg	Val	Arg	Gln	Gly	230	235	240
Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Ala	Pro	Ile	Pro	Glu	Gly	245	250	255
Leu	Gly	Arg	Pro	Gly	Arg	Ile	Glu	Glu	Glu	Gly	Gly				260	265	267

(2) INFORMATION FOR SEQ ID NO:70:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:70:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Ala	Arg	Glu	Lys	Arg	Ala	Ile	Gly	Met	35	40	45	
Gly	Ala	Phe	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Arg	Leu	Leu	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	

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Ala	Gln	Gln	His	Leu	Leu	Lys	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105
Leu	Gln	Ala	Arg	Ile	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	110	115	120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Ile	Ile	Cys	Pro	125	130	135
Thr	Asn	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Lys	Ser	Gln	Ser	140	145	150
Asp	Ile	Trp	Asp	Lys	Met	Thr	Trp	Leu	Glu	Trp	Asp	Lys	Glu	Val	155	160	165
Ser	Asn	Tyr	Thr	Gln	Val	Ile	Tyr	Asn	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180
Thr	Gln	Gln	Glu	Ile	Asn	Glu	Arg	Asp	Leu	Leu	Ala	Leu	Asp	Lys	185	190	195
Trp	Ala	Asn	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Ser	Asn	Trp	Leu	Trp	200	205	210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu	215	220	225
Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Ile	Asn	Arg	Val	Arg	Gln	230	235	240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Thr	His	His	Gln	Arg	245	250	255
Glu	Pro	Asp	Arg	Pro	Glu	Arg	Ile	Glu	Glu	Gly	Gly	Gly			260	265	268

(2) INFORMATION FOR SEQ ID NO:71:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:71:

09854316.051501

Gly	Gly	Gly	Asn	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Ser	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	35	40	45	
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Ala	Gln	Ala	Arg	Gln	Leu	Leu	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	
Ala	Gln	Gln	His	Met	Leu	Lys	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105	
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	110	115	120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	125	130	135	
Thr	Asn	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Lys	Ser	Met	Asn	140	145	150	
Glu	Ile	Trp	Asp	Asn	Met	Thr	Trp	Leu	Gln	Trp	Asp	Lys	Glu	Ile	155	160	165	
Ser	Asn	Tyr	Thr	Gln	Ile	Ile	Tyr	Asn	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180	
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Asp	Leu	Leu	Ala	Leu	Asp	Lys	185	190	195	
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Ser	Arg	Trp	Leu	Trp	200	205	210	
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu	215	220	225	

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Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Val	Ile	Asn	Arg	Val	Arg	Gln
				230					235					240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Ile	Arg	Thr	Pro	Asn	Pro	Lys
				245					250					255
Glu	Pro	Asp	Arg	Leu	Gly	Arg	Ile	Asp	Gly	Glu	Gly	Gly		
				260					265				268	

(2) INFORMATION FOR SEQ ID NO:72:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 268 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:72:

Gly	Gly	Gly	Asn	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Ile	Gly	Met
				35					40					45
Gly	Ala	Val	Phe	Ile	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Met	Val	Gln	Ala	Arg	Gln	Leu	Leu
				65					70					75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile	Glu
				80					85					90
Ala	Gln	Gln	His	Leu	Leu	Arg	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln
				95					100					105
Leu	Gln	Ala	Arg	Val	Leu	Ala	Leu	Glu	Arg	Tyr	Leu	Arg	Asp	Gln
				110					115					120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr
				125					130					135

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Thr	Asn	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Lys	Ser	Tyr	Ser	140	145	150
Glu	Ile	Trp	Asp	Asn	Met	Thr	Trp	Leu	Gln	Trp	Asp	Lys	Glu	Ile	155	160	165
Asn	Asn	Tyr	Thr	Glu	Leu	Ile	Tyr	Ser	Leu	Ile	Glu	Asp	Ser	Gln	170	175	180
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Asp	Leu	Leu	Ala	Leu	Asp	Lys	185	190	195
Trp	Ala	Asn	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Ser	Asn	Trp	Leu	Trp	200	205	210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu	215	220	225
Arg	Ile	Ile	Phe	Ala	Val	Leu	Ser	Ile	Ile	Asn	Arg	Val	Arg	Gln	230	235	240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	His	Thr	Pro	Asn	Pro	Arg	245	250	255
Gly	Leu	Asp	Arg	Pro	Gly	Arg	Ile	Glu	Glu	Glu	Gly	Gly			260	265	268

(2) INFORMATION FOR SEQ ID NO:73:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 243 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:73:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Asp	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu	35	40	45	

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Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	
				50					55					60	
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	
				65					70					75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Met	Ala	Ile	Glu	
				80					85					90	
Ala	Gln	Gln	His	Leu	Leu	Lys	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	
				95					100					105	
Leu	Gln	Ala	Arg	Val	Leu	Ala	Leu	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	
				110					115					120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	
				125					130					135	
Thr	Thr	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Lys	Thr	Tyr	Ser	
				140					145					150	
Asp	Ile	Trp	Asp	Asn	Met	Thr	Trp	Leu	Gln	Trp	Asp	Lys	Glu	Ile	
				155					160					165	
Ser	Asn	Tyr	Thr	Lys	Ile	Ile	Tyr	Ala	Leu	Ile	Glu	Glu	Ser	Ala	
				170					175					180	
Asn	Gln	Gln	Glu	Lys	Asn	Glu	Gln	Asp	Leu	Leu	Ala	Leu	Asp	Lys	
				185					190					195	
Trp	Thr	Ser	Leu	Trp	Ser	Trp	Phe	Asp	Ile	Thr	Lys	Trp	Leu	Trp	
				200					205					210	
Tyr	Ile	Arg	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu	
				215					220					225	
Arg	Ile	Val	Phe	Ala	Val	Leu	Asn	Ile	Ile	Asn	Arg	Val	Arg	Gln	
				230					235					240	
Gly	Tyr	Ser													

(2) INFORMATION FOR SEQ ID NO:74:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 104 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:74:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu	35	40	45	
Gly	Ala	Val	Phe	Ile	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	
Ala	Gln	Gln	His	Leu	Leu	Lys	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	104		

(2) INFORMATION FOR SEQ ID NO:75:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 54 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:75:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Ser	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Trp	Arg	Glu	Lys	Arg	Ala	Val	Val	Glu	35	40	45	

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Ile Gly Ala Val Phe Leu Gly Phe Leu  
50 54

(2) INFORMATION FOR SEQ ID NO:76:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:76:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Glu	Ile	Lys	Pro	Leu	Gly	Val	Ala	Pro	Thr	Xaa	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Xaa	35	40	45	
Ile	Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	50	55	60	
Met	Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	65	70	75	
Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile	80	85	90	
Glu	Ala	Gln	Gln	His	Xaa	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	95	100	105	
Gln	Leu	Gln	Thr	Arg	Val	Leu	Ala	Ile	Glu	Arg	Tyr	Leu	Lys	Asp	110	115	120	
Gln	Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	125	130	135	
Thr	Thr	Xaa	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Arg	Ser	Gln	140	145	150	
Thr	Asp	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Gln	Trp	Asp	Arg	Glu	155	160	165	

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Ile	Ser	Asn	Tyr	Thr	Asp	Thr	Ile	Tyr	Arg	Leu	Leu	Glu	Asp	Ser
				170					175					180
Gln	Asn	Gln	Gln	Glu	Arg	Asn	Glu	Lys	Asp	Leu	Leu	Ala	Leu	Asp
				185					190					195
Ser	Trp	Lys	Asn	Leu	Trp	Asn	Trp	Phe	Ser	Ile	Thr	Asn	Trp	Leu
				200					205					210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly
				215					220					225
Leu	Arg	Ile	Ile	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg
				230					235					240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Thr	Pro	Asn	Pro
				245					250					255
Arg	Gly	Pro	Asp	Arg	Leu	Gly	Arg	Ile	Glu	Glu	Glu	Gly	Gly	
				260					265				269	

(2) INFORMATION FOR SEQ ID NO:77:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:77:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Glu	Ile	Lys	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35					40					45
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Ala	Ser	Val	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu
				65					70					75

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Phe Gly Ile Val Gln Gln Gln Ser Asn Leu Leu Arg Ala Ile Glu  
                     80                    85                    90  
 Ala Gln His Gly Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
                     95                    100                    105  
 Leu Gln Thr Arg Val Leu Ala Ile Glu Arg Tyr Leu Lys Asp Gln  
                     110                    115                    120  
 Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr  
                     125                    130                    135  
 Thr Ala Val Ala Trp Asn Ser Ser Trp Ser Asn Lys Ser Gln Ser  
                     140                    145                    150  
 Asp Ile Trp Asp Asn Met Thr Trp Met Glu Trp Asp Arg Glu Ile  
                     155                    160                    165  
 Ser Asn Tyr Thr Asp Ile Ile Tyr Lys Leu Leu Glu Asp Ser Gln  
                     170                    175                    180  
 Asn Gln Gln Glu Lys Asn Glu Lys Asp Leu Leu Ala Leu Asp Ser  
                     185                    190                    195  
 Trp Lys Asn  
                     198

(2) INFORMATION FOR SEQ ID NO:78:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:78:

Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
   1                    5                    10                    15  
 Tyr Lys Val Val Glu Ile Lys Pro Leu Gly Val Ala Pro Thr Glu  
                     20                    25                    30  
 Ala Lys Arg Arg Val Val Glu Arg Glu Lys Arg Ala Val Gly Ile  
                     35                    40                    45

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Gly Ala Val Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
                             50                            55                            60  
 Gly Ala Ala Ser Ile Thr Leu Thr Val Gln Ala Arg Gln Leu Leu  
                             65                            70                            75  
 Ser Gly Ile Val Gln Gln Gln Ser Asn Leu Leu Arg Ala Ile Glu  
                             80                            85                            90  
 Ala Arg Gln Gly Met Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
                             95                            100                            105  
 Leu Gln Ala Arg Val Leu Ala Ile Glu Arg Tyr Leu Gln Asp Gln  
                             110                            115                            120  
 Gln Leu Leu Gly Leu Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr  
                             125                            130                            135  
 Thr Thr Val Pro Trp Asn Ser Ser Trp Ser Asn Lys Ser Lys Thr  
                             140                            145                            150  
 Asp Ile Trp Asp Asn Met Thr Trp Met Gln Trp Asp Arg Glu Ile  
                             155                            160                            165  
 Ser Asn Tyr Thr Asp Thr Ile Tyr Lys Leu Leu Glu Asp Ser Gln  
                             170                            175                            180  
 Asn Gln Gln Glu Lys Asn Glu Lys Asp Leu Leu Ala Leu Asp Ser  
                             185                            190                            195  
 Trp Asn Asn  
                             198

(2) INFORMATION FOR SEQ ID NO:79:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:79:

Gly Gly Gly Asp Met Arg Asn Asn Trp Arg Ser Glu Leu Tyr Lys  
     1                            5                            10                            15

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Tyr Lys Val Val Glu Ile Lys Pro Leu Gly Val Ala Pro Thr Thr  
                     20                    25                    30  
 Ala Lys Arg Arg Val Val Glu Arg Glu Lys Arg Ala Val Gly Ile  
                     35                    40                    45  
 Gly Ala Val Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
                     50                    55                    60  
 Gly Ala Ala Ser Met Thr Leu Thr Val Gln Ala Arg Gln Leu Leu  
                     65                    70                    75  
 Ser Gly Ile Val Gln Gln Gln Ser Asn Leu Leu Arg Ala Ile Glu  
                     80                    85                    90  
 Ala Gln Gln Gly Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
                     95                    100                    105  
 Leu Gln Thr Arg Val Leu Ala Ile Glu Arg Tyr Leu Lys Asp Gln  
                     110                    115                    120  
 Gln Leu Leu Gly Ile Trp Gly Arg Ser Gly Lys Leu Ile Cys Thr  
                     125                    130                    135  
 Thr Asn Val Pro Trp Asn Ser Ser Trp Ser Asn Arg Ser Gln Thr  
                     140                    145                    150  
 Asp Ile Trp Asp Asn Met Thr Trp Met Gln Trp Asp Arg Glu Ile  
                     155                    160                    165  
 Ser Asn Tyr Thr Asp Thr Ile Tyr Arg Leu Leu Glu Asp Ser Gln  
                     170                    175                    180  
 Asn Gln Gln Glu Arg Asn Glu Lys Asp Leu Leu Ala Leu Asp Ser  
                     185                    190                    195  
 Trp Lys Asn  
                     198

(2) INFORMATION FOR SEQ ID NO:80:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 198 amino acids
  - (B) TYPE: Amino Acid
  - (D) TOPOLOGY: Linear

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:80:

Gly Gly Gly Glu Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
1 5 10 15  
Tyr Lys Val Val Glu Ile Lys Pro Leu Gly Val Ala Pro Thr Thr  
20 25 30  
Ala Lys Arg Arg Val Val Glu Arg Glu Lys Arg Ala Val Gly Ile  
35 40 45  
Gly Ala Val Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
50 55 60  
Gly Ala Ala Ser Met Thr Val Thr Val Gln Ala Arg Gln Leu Leu  
65 70 75  
Ser Gly Ile Val Gln Gln Gln Ser Asn Leu Leu Arg Ala Ile Glu  
80 85 90  
Ala Gln Gln Gly Leu Leu Gln Leu Thr Ile Trp Gly Ile Lys Gln  
95 100 105  
Leu Gln Ala Arg Val Leu Ala Ile Glu Arg Tyr Leu Lys Glu Gln  
110 115 120  
Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr  
125 130 135  
Thr Thr Val Pro Trp Asn Ser Ser Trp Ser Asn Arg Ser Gln Thr  
140 145 150  
Asp Ile Trp Asp Asn Met Thr Trp Met Gln Trp Asp Arg Glu Ile  
155 160 165  
Ser Asn Tyr Thr Glu Thr Ile Tyr Arg Leu Leu Glu Asp Ser Gln  
170 175 180  
Asn Gln Gln Glu Arg Asn Glu Lys Asp Leu Leu Ala Leu Asp Ser  
185 190 195  
Trp Lys Asn  
198

(2) INFORMATION FOR SEQ ID NO:81:



(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 198 amino acids

(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:81:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	
1				5				10						15	
Tyr	Lys	Val	Val	Glu	Ile	Lys	Pro	Leu	Gly	Val	Ala	Pro	Thr	Thr	
				20				25						30	
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Leu	
				35				40						45	
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	
				50				55						60	
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	
				65				70						75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile	Glu	
				80				85						90	
Ala	Gln	Gln	Gly	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	
				95				100						105	
Leu	Gln	Thr	Arg	Val	Leu	Ala	Ile	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	
				110				115						120	
Gln	Leu	Leu	Gly	Met	Trp	Gly	Cys	Ser	Gly	Lys	Leu	Ile	Cys	Thr	
				125				130						135	
Thr	Ala	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Arg	Ser	Gln	Thr	
				140				145						150	
Asp	Ile	Trp	Asp	Asn	Met	Thr	Trp	Met	Gln	Trp	Asp	Arg	Glu	Ile	
				155				160						165	
Ser	Asn	Tyr	Thr	Asn	Thr	Ile	Tyr	Arg	Leu	Leu	Glu	Asp	Ser	Gln	
				170				175						180	
Asn	Gln	Gln	Glu	Arg	Asn	Glu	Lys	Asp	Leu	Leu	Ala	Leu	Asp	Ser	
				185				190						195	

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Trp Lys Asn  
198

(2) INFORMATION FOR SEQ ID NO:82:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 121 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:82:

Gly Gly Gly Asn Met Lys Asp Asn Trp Arg Asn Glu Leu Tyr Lys  
1 5 10 15  
Tyr Lys Val Val Glu Ile Lys Pro Leu Gly Ile Ala Pro Thr Gly  
20 25 30  
Ser Lys Arg Arg Val Val Glu Arg Glu Lys Arg Ala Val Gly Ile  
35 40 45  
Gly Ala Val Leu Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
50 55 60  
Ala Ala Ala Ser Ile Thr Leu Thr Val Gln Ala Arg Gln Leu Leu  
65 70 75  
Ser Gly Ile Val Gln Gln Gln Ser Asn Leu Leu Arg Ala Ile Glu  
80 85 90  
Ala Gln Gln Gly Met Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
95 100 105  
Leu Gln Thr Arg Val Leu Ala Ile Glu Arg Tyr Leu Lys Asp Gln  
110 115 120  
Gln  
121

(2) INFORMATION FOR SEQ ID NO:83:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 72 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO:83:

Gly	Gly	Gly	Asp	Met	Arg	Asn	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Glu	Ile	Lys	Pro	Leu	Gly	Val	Ala	Pro	Thr	Thr
				20					25					30
Pro	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35					40					45
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Pro	Leu	Arg			
				65					70		72			

(2) INFORMATION FOR SEQ ID NO:84:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 269 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:84:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Arg	Ile	Glu	Pro	Leu	Gly	Xaa	Ala	Pro	Thr	Xaa
				20					25					30
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Ile	Gly	Leu
				35					40					45
Gly	Ala	Xaa	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Ala	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu
				65					70					75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu
				80					85					90

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Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	110	115	120
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	His	Ile	Cys	Thr	125	130	135
Thr	Xaa	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Arg	Ser	Leu	Asp	140	145	150
Glu	Ile	Trp	Gln	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	Ile	155	160	165
Asp	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Ser	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180
Ile	Gln	Gln	Glu	Lys	Asn	Glu	Lys	Glu	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195
Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Ser	Ile	Thr	Lys	Trp	Leu	Trp	200	205	210
Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly	Leu	215	220	225
Arg	Ile	Val	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg	Gln	230	235	240
Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Leu	Leu	Pro	Ala	Pro	Arg	245	250	255
Gly	Xaa	Pro	Asp	Arg	Pro	Glu	Gly	Ile	Glu	Glu	Glu	Gly	Gly		260	265	269

(2) INFORMATION FOR SEQ ID NO:85:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:85:

Gly Gly Gly Asp Met Lys Asp Asn Trp Arg Asn Glu Leu Tyr Lys  
 1 5 10 15  
 Tyr Lys Val Val Arg Ile Glu Pro Leu Gly Ile Ala Pro Thr Arg  
 20 25 30  
 Ala Lys Arg Arg Val Val Glu Arg Glu Lys Arg Ala Ile Gly Leu  
 35 40 45  
 Gly Ala Val Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
 50 55 60  
 Gly Ala Val Ser Val Ala Leu Thr Gly Gln Ala Arg Gln Leu Leu  
 65 70 75  
 Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Glu  
 80 85 90  
 Ala Gln Gln His Met Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
 95 100 105  
 Leu Gln Ala Arg Val Leu Ala Val Glu Ser Tyr Leu Lys Asp Gln  
 110 115 120  
 Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys His Ile Cys Thr  
 125 130 135  
 Thr Thr Val Pro Trp Asn Ser Ser Trp Ser Asn Lys Ser Leu Glu  
 140 145 150  
 Glu Ile Trp Asn Asn Met Thr Trp Ile Glu Trp Glu Arg Glu Ile  
 155 160 165  
 Asp Asn Tyr Thr Gly Val Ile Tyr Ser Leu Ile Glu Asn Ser Gln  
 170 175 180  
 Ile Gln Gln Glu Lys Asn Glu Gln Asp Leu Leu Gln Leu Asp Lys  
 185 190 195  
 Trp Ala Ser  
 198

(2) INFORMATION FOR SEQ ID NO:86:

(i) SEQUENCE CHARACTERISTICS:

09354916 "051501"

(A) LENGTH: 198 amino acids  
 (B) TYPE: Amino Acid  
 (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:86:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Lys	Ile	Glu	Pro	Ile	Gly	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Arg	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Ile	Gly	Leu	35	40	45	
Gly	Ala	Val	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Ala	Ser	Val	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Met	65	70	75	
Ser	Gly	Ile	Val	His	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105	
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Arg	Asp	Gln	110	115	120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Arg	His	Ile	Cys	Thr	125	130	135	
Thr	Asn	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Arg	Ser	Leu	Asp	140	145	150	
Glu	Ile	Trp	Gln	Asn	Met	Thr	Trp	Met	Glu	Trp	Glu	Arg	Glu	Ile	155	160	165	
Asp	Asn	Tyr	Thr	Gly	Leu	Ile	Tyr	Ser	Leu	Ile	Glu	Glu	Ser	Gln	170	175	180	
Ile	Gln	Gln	Glu	Lys	Asn	Glu	Lys	Glu	Leu	Leu	Glu	Leu	Asp	Lys	185	190	195	

00054346 "054504

Trp Ala Ser  
198

(2) INFORMATION FOR SEQ ID NO:87:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:87:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Ile	Ser	Glu	Leu	Tyr	Lys
1				5				10						15
Tyr	Lys	Val	Val	Arg	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Lys
				20				25						30
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Ile	Gly	Leu
				35				40						45
Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50				55						60
Gly	Ala	Ala	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu
				65				70						75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu
				80				85						90
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln
				95				100						105
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Gln	Asp	Gln
				110				115						120
Arg	Leu	Leu	Gly	Met	Trp	Gly	Cys	Ser	Gly	Lys	His	Ile	Cys	Thr
				125				130						135
Thr	Phe	Val	Pro	Trp	Asn	Ser	Ser	Trp	Ser	Asn	Arg	Ser	Leu	Asp
				140				145						150
Asp	Ile	Trp	Asn	Asn	Met	Thr	Trp	Met	Gln	Trp	Glu	Lys	Glu	Ile
				155				160						165

05354816 "051501

Ser Asn Tyr Thr Gly Ile Ile Tyr Asn Leu Ile Glu Glu Ser Gln  
170 175 180

Ile Gln Gln Glu Lys Asn Glu Lys Glu Leu Leu Glu Leu Asp Lys  
185 190 195

Trp Ala Ser  
198

(2) INFORMATION FOR SEQ ID NO:88:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:88:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Gln	Ile	Glu	Pro	Leu	Gly	Val	Ala	Pro	Thr	Arg	20	25	30	
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Ile	Gly	Leu	35	40	45	
Gly	Ala	Met	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	50	55	60	
Gly	Ala	Arg	Ser	Val	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Met	65	70	75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu	80	85	90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	95	100	105	
Leu	Gln	Ala	Arg	Ile	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	110	115	120	
Gln	Leu	Leu	Gly	Ile	Trp	Gly	Cys	Ser	Gly	Lys	His	Ile	Cys	Thr	125	130	135	

00554816 051504





Leu Gln Ala Arg Ile Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln  
110 115 120

Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr  
125 130 135

Thr Thr Val Pro Trp Asn Ser Ser Trp Ser Asn Arg Ser Leu Asn  
140 145 150

Asp Ile Trp Gln Asn Met Thr Trp Met Glu Trp Glu Arg Glu Ile  
155 160 165

Asp Asn Tyr Thr Gly Leu Ile Tyr Arg Leu Ile Glu Glu Ser Gln  
170 175 180

Thr Gln Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys  
185 190 195

Trp Ala Ser  
198

(2) INFORMATION FOR SEQ ID NO:90:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:90:

Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
1 5 10 15

Tyr Lys Val Ile Lys Ile Glu Pro Leu Gly Leu Ala Pro Thr Arg  
20 25 30

Ala Lys Arg Arg Val Val Ala Arg Glu Lys Arg Ala Ile Gly Leu  
35 40 45

Gly Ala Val Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
50 55 60

Gly Ala Ala Ser Leu Thr Leu Thr Val Gln Ala Arg Gln Leu Met  
65 70 75

0954815 "051501

Ser Gly Ile Val Gln Gln Gln Asn Asn Leu Leu Arg Ala Ile Glu  
                             80                            85                            90  
 Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
                             95                            100                            105  
 Leu Gln Ala Arg Val Leu Ala Val Glu Ser Tyr Leu Lys Asp Gln  
                             110                            115                            120  
 Gln Leu Leu Gly Ile Trp Gly Cys Ser Gly Arg His Ile Cys Pro  
                             125                            130                            135  
 Thr Gln Val Pro Trp Asn Ser Ser Trp Ser Asn Lys Ser Leu Asp  
                             140                            145                            150  
 Thr Ile Trp Gly Asn Met Thr Trp Met Glu Trp Glu Arg Glu Ile  
                             155                            160                            165  
 Ser Asn Tyr Thr Gly Leu Ile Tyr Asp Leu Ile Glu Glu Ser Gln  
                             170                            175                            180  
 Ile Gln Gln Glu Lys Asn Glu Lys Asp Leu Leu Glu Leu Asp Lys  
                             185                            190                            195  
 Trp Ala Ser  
                             198

(2) INFORMATION FOR SEQ ID NO:91:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 104 amino acids
  - (B) TYPE: Amino Acid
  - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:91:

Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Asn Glu Leu Tyr Lys  
   1                            5                            10                            15  
 Tyr Lys Val Val Arg Ile Glu Pro Leu Gly Leu Ala Pro Thr Lys  
                             20                            25                            30  
 Ala Arg Arg Arg Val Val Glu Arg Glu Lys Arg Ala Ile Gly Leu  
                             35                            40                            45

0054916-054501

Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Ala	Ser	Leu	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu
				65					70					75
Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	Leu	Arg	Ala	Ile	Glu
				80					85					90
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	
				95					100					104

(2) INFORMATION FOR SEQ ID NO:92:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 70 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:92:

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15
Tyr	Lys	Val	Val	Arg	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Met
				20					25					30
Ser	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Ile	Gly	Leu
				35					40					45
Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50					55					60
Gly	Ala	Ala	Thr	Leu	Thr	Leu	Thr	Val	Xaa					
				65					70					

(2) INFORMATION FOR SEQ ID NO:93:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 70 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:93:

Gly Gly Gly Asp Met Arg Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
 1 5 10 15  
 Tyr Lys Val Val Arg Ile Glu Pro Leu Gly Leu Ala Pro Thr Glu  
 20 25 30  
 Ala Lys Arg Arg Val Val Glu Arg Glu Lys Arg Ala Ile Gly Leu  
 35 40 45  
 Gly Ala Met Phe Leu Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
 50 55 60  
 Gly Ala Ala Ser Met Thr Leu Thr Val Xaa  
 65 70

(2) INFORMATION FOR SEQ ID NO:94:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 53 amino acids
  - (B) TYPE: Amino Acid
  - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:94:

Gly Gly Gly Asp Met Arg Asp Asn Arg Arg Ser Glu Leu Tyr Lys  
 1 5 10 15  
 Tyr Lys Val Val Lys Ile Glu Pro Leu Gly Val Ala Pro Thr Lys  
 20 25 30  
 Thr Lys Arg Arg Val Val Glu Arg Glu Glu Arg Ala Ile Gly Leu  
 35 40 45  
 Gly Ala Met Phe Leu Gly Phe Leu  
 50 53

(2) INFORMATION FOR SEQ ID NO:95:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 41 amino acids
  - (B) TYPE: Amino Acid
  - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:95:

09654816.051501

Gly	Gly	Gly	Asp	Met	Arg	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15

Tyr	Lys	Val	Val	Arg	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Met
				20					25					30

Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg
				35					40	41

(2) INFORMATION FOR SEQ ID NO:96:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 269 amino acids

(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:96:

Gly	Gly	Gly	Asn	Ile	Lys	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5					10					15

Tyr	Lys	Val	Val	Gln	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Arg
				20					25					30

Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Xaa
				35					40					45

Ile	Gly	Ala	Met	Ile	Phe	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr
				50					55					60

Met	Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu
				65					70					75

Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile
				80					85					90

Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys
				95					100					105

Gln	Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp
				110					115					120

Gln	Lys	Phe	Leu	Gly	Leu	Trp	Gly	Cys	Ser	Gly	Lys	Ile	Ile	Cys
				125					130					135

005446 051601

Thr	Thr	Ala	Val	Pro	Trp	Asn	Ser	Thr	Trp	Ser	Asn	Arg	Ser	Phe
				140					145					150
Glu	Glu	Ile	Trp	Asn	Asn	Met	Thr	Trp	Ile	Glu	Trp	Glu	Arg	Glu
				155					160					165
Ile	Ser	Asn	Tyr	Thr	Asn	Gln	Ile	Tyr	Glu	Ile	Leu	Thr	Glu	Ser
				170					175					180
Gln	Asn	Gln	Gln	Asp	Arg	Asn	Glu	Lys	Asp	Leu	Leu	Glu	Leu	Asp
				185					190					195
Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp	Phe	Asp	Ile	Thr	Asn	Trp	Leu
				200					205					210
Trp	Tyr	Ile	Lys	Ile	Phe	Ile	Met	Ile	Val	Gly	Gly	Leu	Ile	Gly
				215					220					225
Leu	Arg	Ile	Ile	Phe	Ala	Val	Leu	Ser	Ile	Val	Asn	Arg	Val	Arg
				230					235					240
Gln	Gly	Tyr	Ser	Pro	Leu	Ser	Phe	Gln	Thr	Pro	Xaa	His	His	Gln
				245					250					255
Arg	Glu	Pro	Asp	Arg	Pro	Glu	Arg	Ile	Glu	Glu	Gly	Gly	Gly	
				260					265					269

(2) INFORMATION FOR SEQ ID NO:97:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:97:

Gly	Gly	Gly	Asn	Ile	Lys	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5				10						15
Tyr	Lys	Val	Val	Gln	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Arg
				20				25						30
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35				40						45

005416 051501

Gly Ala Met Ile Phe Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
 50 55 60  
 Gly Ala Ala Ser Ile Thr Leu Thr Val Gln Ala Arg Gln Leu Val  
 65 70 75  
 Ser Gly Ile Val Gln Gln Gln Ser Asn Leu Leu Arg Ala Ile Glu  
 80 85 90  
 Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
 95 100 105  
 Leu Gln Ala Arg Val Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln  
 110 115 120  
 Lys Phe Leu Gly Leu Trp Gly Cys Ser Gly Lys Ile Ile Cys Thr  
 125 130 135  
 Thr Ala Val Pro Trp Asn Ser Thr Trp Ser Asn Arg Ser Phe Glu  
 140 145 150  
 Glu Ile Trp Ser Asn Met Thr Trp Ile Glu Trp Glu Arg Glu Ile  
 155 160 165  
 Ser Asn Tyr Thr Asn Gln Ile Tyr Glu Ile Leu Thr Glu Ser Gln  
 170 175 180  
 Asn Gln Gln Asp Arg Asn Glu Lys Asp Leu Leu Glu Leu Asp Lys  
 185 190 195  
 Trp Ala Ser  
 198

(2) INFORMATION FOR SEQ ID NO:98:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:98:

Gly Gly Gly Asn Ile Lys Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
 1 5 10 15

09854816 "051501



Tyr Lys Val Val Gln Ile Glu Pro Leu Gly Ile Ala Pro Thr Arg  
 20 25 30  
 Ala Lys Arg Arg Val Val Glu Arg Glu Lys Arg Ala Val Gly Ile  
 35 40 45  
 Gly Ala Met Ile Phe Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
 50 55 60  
 Gly Ala Ala Ser Ile Thr Leu Thr Val Gln Ala Arg Gln Leu Leu  
 65 70 75  
 Ser Gly Ile Val Gln Gln Gln Ser Asn Leu Leu Arg Ala Ile Glu  
 80 85 90  
 Ala Gln Gln His Leu Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
 95 100 105  
 Leu Gln Ala Arg Val Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln  
 110 115 120  
 Lys Phe Leu Gly Leu Trp Gly Cys Ser Gly Lys Ile Ile Cys Thr  
 125 130 135  
 Thr Ala Val Pro Trp Asn Ser Thr Trp Ser Asn Arg Ser Phe Glu  
 140 145 150  
 Glu Ile Trp Asn Asn Met Thr Trp Thr Glu Trp Glu Arg Glu Ile  
 155 160 165  
 Ser Asn Tyr Thr Asn Gln Ile Tyr Asp Ile Leu Thr Glu Ser Gln  
 170 175 180  
 Asn Gln Gln Asp Arg Asn Glu Lys Asp Leu Leu Gly Leu Asp Lys  
 185 190 195  
 Trp Ala Ser  
 198

(2) INFORMATION FOR SEQ ID NO:99:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

005416 051504

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:99:

Gly Gly Gly Asn Ile Lys Asp Asn Trp Arg Ser Glu Leu Tyr Lys  
1 5 10 15  
Tyr Lys Val Val Gln Ile Glu Pro Leu Gly Ile Ala Pro Thr Arg  
20 25 30  
Ala Lys Arg Arg Val Val Glu Arg Glu Lys Arg Ala Val Gly Ile  
35 40 45  
Gly Ala Met Ile Phe Gly Phe Leu Gly Ala Ala Gly Ser Thr Met  
50 55 60  
Gly Ala Ala Ser Ile Thr Leu Thr Val Gln Ala Arg Gln Leu Leu  
65 70 75  
Ser Gly Ile Val Gln Gln Gln Ser Asn Leu Leu Arg Ala Ile Glu  
80 85 90  
Ala Gln Gln His Met Leu Gln Leu Thr Val Trp Gly Ile Lys Gln  
95 100 105  
Leu Gln Ala Arg Val Leu Ala Val Glu Arg Tyr Leu Lys Asp Gln  
110 115 120  
Lys Phe Leu Gly Leu Trp Gly Cys Ser Gly Lys Ile Ile Cys Thr  
125 130 135  
Thr Ala Val Pro Trp Asn Ser Thr Trp Ser Asn Lys Ser Phe Glu  
140 145 150  
Glu Ile Trp Asn Asn Met Thr Trp Thr Glu Trp Glu Arg Glu Ile  
155 160 165  
Ser Asn Tyr Thr Asn Gln Ile Tyr Glu Ile Leu Thr Glu Ser Gln  
170 175 180  
Asn Gln Gln Asp Arg Asn Glu Lys Asp Leu Leu Glu Leu Asp Lys  
185 190 195  
Trp Ala Ser  
198

(2) INFORMATION FOR SEQ ID NO:100:

00054816 051501

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 189 amino acids

(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:100:

Gly	Gly	Gly	Asn	Ile	Lys	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	
1				5					10					15	
Tyr	Lys	Val	Val	Gln	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Arg	
				20					25					30	
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	
				35					40					45	
Gly	Ala	Met	Ile	Phe	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	
				50					55					60	
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	
				65					70					75	
Ser	Gly	Ile	Val	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Glu	Ala	Gln	
				80					85					90	
Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Gln	Leu	Gln	Ala	Arg	
				95					100					105	
Val	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	Lys	Leu	Gly	Leu	Trp	
				110					115					120	
Cys	Ser	Gly	Lys	Ile	Ile	Cys	Thr	Thr	Ala	Val	Pro	Trp	Asn	Ser	
				125					130					135	
Thr	Trp	Ser	Asn	Arg	Ser	Phe	Glu	Glu	Ile	Trp	Asn	Asn	Met	Trp	
				140					145					150	
Ile	Glu	Trp	Arg	Glu	Ile	Ser	Asn	Tyr	Thr	Asn	Gln	Ile	Tyr	Glu	
				155					160					165	
Ile	Leu	Thr	Glu	Ser	Gln	Asn	Gln	Gln	Asp	Arg	Asn	Glu	Lys	Asp	
				170					175					180	
Leu	Leu	Glu	Leu	Asp	Lys	Trp	Ala	Ser							
				185					189						

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(2) INFORMATION FOR SEQ ID NO:101:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 198 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:101:

Gly	Gly	Gly	Asn	Ile	Lys	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	
1				5				10						15	
Tyr	Lys	Val	Val	Gln	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Arg	
				20				25						30	
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile	
				35				40						45	
Gly	Ala	Met	Ile	Phe	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met	
				50				55						60	
Gly	Ala	Ala	Ser	Ile	Thr	Leu	Thr	Val	Gln	Ala	Arg	Gln	Leu	Leu	
				65				70						75	
Ser	Gly	Ile	Val	Gln	Gln	Gln	Ser	Asn	Leu	Leu	Arg	Ala	Ile	Glu	
				80				85						90	
Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Thr	Val	Trp	Gly	Ile	Lys	Gln	
				95				100						105	
Leu	Gln	Ala	Arg	Val	Leu	Ala	Val	Glu	Arg	Tyr	Leu	Lys	Asp	Gln	
				110				115						120	
Lys	Phe	Leu	Gly	Leu	Trp	Gly	Cys	Ser	Gly	Lys	Ile	Ile	Cys	Thr	
				125				130						135	
Thr	Ala	Val	Pro	Trp	Asn	Ser	Thr	Trp	Ser	Asn	Arg	Ser	Leu	Glu	
				140				145						150	
Glu	Ile	Trp	Asn	Asn	Met	Thr	Trp	Ile	Glu	Trp	Glu	Arg	Glu	Ile	
				155				160						165	
Ser	Asn	Tyr	Thr	Asn	Arg	Ile	Tyr	Glu	Ile	Leu	Thr	Lys	Ser	Gln	
				170				175						180	

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Asp Gln Gln Asp Arg Asn Glu Lys Asp Leu Leu Glu Leu Asp Lys  
185 190 195

Trp Ala Ser  
198

(2) INFORMATION FOR SEQ ID NO:102:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 70 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:102:

Gly	Gly	Gly	Asn	Ile	Lys	Asp	Asn	Trp	Arg	Ser	Glu	Leu	Tyr	Lys
1				5				10						15
Tyr	Lys	Val	Val	Gln	Ile	Glu	Pro	Leu	Gly	Ile	Ala	Pro	Thr	Arg
				20				25						30
Ala	Lys	Arg	Arg	Val	Val	Glu	Arg	Glu	Lys	Arg	Ala	Val	Gly	Ile
				35				40						45
Gly	Ala	Met	Ile	Phe	Gly	Phe	Leu	Gly	Ala	Ala	Gly	Ser	Thr	Met
				50				55						60
Gly	Ala	Pro	Ser	Ile	Thr	Leu	Thr	Val	Xaa					
				65				70						

(2) INFORMATION FOR SEQ ID NO:103:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 213 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:103:

Xaa	Gly	Gly	Asp	Met	Lys	Asp	Ile	Trp	Arg	Thr	Glu	Leu	Tyr	Asn
1				5				10						15
Tyr	Lys	Val	Val	Arg	Ile	Lys	Pro	Xaa	Ser	Val	Ala	Pro	Thr	Lys
				20				25						30

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Xaa Xaa Arg Pro Xaa Ile Xaa Xaa Xaa Xaa Xaa His Arg Xaa Lys  
35 40 45  
Arg Ala Val Gly Xaa Leu Gly Met Leu Phe Leu Gly Val Leu Ser  
50 55 60  
Ala Ala Gly Ser Thr Met Gly Ala Ala Ala Thr Xaa Leu Thr Val  
65 70 75  
Gln Thr Xaa Xaa Leu Leu Lys Gly Ile Val Gln Gln Gln Asp Asn  
80 85 90  
Leu Leu Arg Ala Ile Xaa Ala Gln Gln His Leu Leu Xaa Leu Ser  
95 100 105  
Val Trp Gly Xaa Xaa Gln Leu Xaa Ala Arg Leu Leu Ala Xaa Glu  
110 115 120  
Thr Xaa Leu Gln Xaa Gln Gln Leu Leu Ser Leu Trp Gly Cys Lys  
125 130 135  
Gly Lys Leu Val Cys Tyr Thr Xaa Val Xaa Trp Asn Asn Ser Trp  
140 145 150  
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Asn Ser Ser Xaa Xaa Xaa  
155 160 165  
Xaa Ile Trp Asp Asn Leu Thr Trp Gln Xaa Trp Asp Arg Leu Xaa  
170 175 180  
Ser Asn Xaa Xaa Xaa Xaa Ile Tyr Xaa Glu Xaa Gln Xaa Ala Gln  
185 190 195  
Xaa Gln Gln Glu Lys Asn Glu Lys Xaa Leu Leu Glu Leu Asp Glu  
200 205 210  
Trp Ala Ser  
213

(2) INFORMATION FOR SEQ ID NO:104:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 200 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:104:

Ile Gly Gly Asp Met Lys Asp Ile Trp Arg Thr Glu Leu Phe Asn  
1 5 10 15  
Tyr Lys Val Val Arg Val Lys Pro Phe Ser Val Ala Pro Thr Arg  
20 25 30  
Ile Ala Arg Pro Val Ile Ser Thr Arg Thr His Arg Glu Lys Arg  
35 40 45  
Ala Val Gly Leu Gly Met Leu Phe Leu Gly Val Leu Ser Ala Ala  
50 55 60  
Gly Ser Thr Met Gly Ala Ala Ala Thr Thr Leu Ala Val Gln Thr  
65 70 75  
His Thr Leu Leu Lys Gly Ile Val Gln Gln Gln Asp Asn Leu Leu  
80 85 90  
Arg Ala Ile Gln Ala Gln Gln Gln Leu Leu Arg Leu Ser Xaa Trp  
95 100 105  
Gly Ile Arg Gln Leu Arg Ala Arg Leu Leu Ala Leu Glu Thr Leu  
110 115 120  
Leu Gln Asn Gln Gln Leu Leu Ser Leu Trp Gly Cys Lys Gly Lys  
125 130 135  
Leu Val Cys Tyr Thr Ser Val Lys Trp Asn Arg Thr Trp Ile Gly  
140 145 150  
Asn Glu Ser Ile Trp Asp Thr Leu Thr Trp Gln Glu Trp Asp Arg  
155 160 165  
Gln Ile Ser Asn Ile Ser Ser Thr Ile Tyr Glu Glu Ile Gln Lys  
170 175 180  
Ala Gln Val Gln Gln Glu Gln Asn Glu Lys Lys Leu Leu Glu Leu  
185 190 195  
Asp Glu Trp Ala Ser  
200

(2) INFORMATION FOR SEQ ID NO:105:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 204 amino acids

(B) TYPE: Amino Acid

(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:105:

Val	Gly	Gly	Asp	Met	Lys	Asp	Ile	Trp	Arg	Thr	Lys	Leu	Tyr	Asn	
1				5				10						15	
Tyr	Lys	Val	Val	Gln	Ile	Lys	Pro	Phe	Ser	Val	Ala	Pro	Thr	Lys	
				20				25						30	
Met	Ser	Arg	Pro	Ile	Ile	Asn	Ile	His	Thr	Pro	His	Arg	Glu	Lys	
				35				40						45	
Arg	Ala	Val	Gly	Leu	Gly	Met	Leu	Phe	Leu	Gly	Val	Leu	Ser	Ala	
				50				55						60	
Ala	Gly	Ser	Thr	Met	Gly	Ala	Ala	Ala	Thr	Ala	Leu	Thr	Val	Arg	
				65				70						75	
Thr	His	Ser	Val	Leu	Lys	Gly	Ile	Val	Gln	Gln	Gln	Asp	Asn	Leu	
				80				85						90	
Leu	Arg	Ala	Ile	Gln	Ala	Gln	Gln	His	Leu	Leu	Arg	Leu	Ser	Val	
				95				100						105	
Trp	Gly	Ile	Arg	Gln	Leu	Arg	Ala	Arg	Leu	Gln	Ala	Leu	Glu	Thr	
				110				115						120	
Leu	Ile	Gln	Asn	Gln	Gln	Arg	Leu	Asn	Leu	Trp	Gly	Cys	Lys	Gly	
				125				130						135	
Lys	Leu	Ile	Cys	Tyr	Thr	Ser	Val	Lys	Trp	Asn	Thr	Ser	Trp	Ser	
				140				145						150	
Gly	Arg	Tyr	Asn	Asp	Asp	Ser	Ile	Trp	Asp	Asn	Leu	Thr	Trp	Gln	
				155				160						165	
Gln	Trp	Asp	Gln	His	Ile	Asn	Asn	Val	Ser	Ser	Ile	Ile	Tyr	Asp	
				170				175						180	
Glu	Ile	Gln	Ala	Ala	Gln	Asp	Gln	Gln	Glu	Lys	Asn	Val	Lys	Ala	
				185				190						195	

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Leu Leu Glu Leu Asp Glu Trp Ala Ser  
200 204

(2) INFORMATION FOR SEQ ID NO:106:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 204 amino acids
- (B) TYPE: Amino Acid
- (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:106:

Thr	Gly	Gly	Asn	Met	Lys	Asp	Ile	Trp	Arg	Ser	Glu	Leu	Tyr	Lys	1	5	10	15
Tyr	Lys	Val	Val	Arg	Ile	Glu	Pro	Leu	Ser	Val	Ala	Pro	Thr	Lys	20	25	30	
Ala	Arg	Arg	His	Thr	Val	Ala	Arg	Gln	Lys	Asp	Arg	Gln	Lys	Arg	35	40	45	
Ala	Ala	Phe	Gly	Leu	Gly	Ala	Leu	Phe	Leu	Gly	Phe	Leu	Gly	Ala	50	55	60	
Ala	Gly	Ser	Thr	Met	Gly	Ala	Ala	Ala	Val	Thr	Leu	Thr	Val	Gln	65	70	75	
Ala	Arg	Gln	Leu	Leu	Ser	Gly	Ile	Val	Gln	Gln	Gln	Asn	Asn	Leu	80	85	90	
Leu	Lys	Ala	Ile	Glu	Ala	Gln	Gln	His	Leu	Leu	Gln	Leu	Ser	Ile	95	100	105	
Trp	Gly	Val	Lys	Gln	Leu	Gln	Ala	Arg	Leu	Leu	Ala	Val	Glu	Arg	110	115	120	
Tyr	Leu	Gln	Asp	Gln	Gln	Ile	Leu	Gly	Leu	Trp	Gly	Cys	Ser	Gly	125	130	135	
Lys	Ala	Val	Cys	Tyr	Thr	Thr	Val	Pro	Trp	Asn	Asn	Ser	Trp	Pro	140	145	150	
Gly	Ser	Asn	Ser	Thr	Asp	Asp	Ile	Trp	Gly	Asn	Leu	Thr	Trp	Gln	155	160	165	

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Gln Trp Asp Lys Leu Val Ser Asn Tyr Thr Gly Lys Ile Phe Gly  
 170 175 180

Leu Leu Glu Glu Ala Gln Ser Gln Gln Glu Lys Asn Glu Arg Asp  
 185 190 195

Leu Leu Glu Leu Asp Gln Trp Ala Ser  
 200 204

(2) INFORMATION FOR SEQ ID NO:107:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 30 amino acids
  - (B) TYPE: Amino Acid
  - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:107:

Glu Trp Asp Arg Glu Ile Asn Asn Tyr Thr Ser Leu Ile His Ser  
 1 5 10 15

Leu Ile Glu Glu Ser Gln Asn Gln Gln Glu Lys Asn Glu Gln Glu  
 20 25 30

(2) INFORMATION FOR SEQ ID NO:108:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 36 amino acids
  - (B) TYPE: Amino Acid
  - (D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:108:

Tyr Thr Ser Leu Ile His Ser Leu Ile Glu Glu Ser Gln Asn Gln  
 1 5 10 15

Gln Glu Lys Asn Glu Gln Glu Leu Leu Glu Leu Asp Lys Trp Ala  
 20 25 30

Ser Leu Trp Asn Trp Phe  
 35 36

(2) INFORMATION FOR SEQ ID NO:109:

- (i) SEQUENCE CHARACTERISTICS:

05854816-054504

(A) LENGTH: 46 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:109:

Trp	Met	Glu	Trp	Glu	Arg	Glu	Ile	Asp	Asn	Tyr	Thr	Xaa	Leu	Ile
1				5					10					15
Tyr	Thr	Leu	Ile	Glu	Glu	Ser	Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu
				20					25					30
Gln	Glu	Leu	Leu	Glu	Leu	Asp	Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp
				35					40					45
Phe														
46														

(2) INFORMATION FOR SEQ ID NO:110:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 46 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:110:

Trp	Leu	Gln	Trp	Asp	Lys	Glu	Ile	Ser	Asn	Tyr	Thr	Xaa	Ile	Ile
1				5					10					15
Tyr	Asn	Leu	Ile	Glu	Glu	Ser	Gln	Asn	Gln	Gln	Glu	Lys	Asn	Glu
				20					25					30
Gln	Asp	Leu	Leu	Ala	Leu	Asp	Lys	Trp	Ala	Asn	Leu	Trp	Asn	Trp
				35					40					45
Phe														
46														

(2) INFORMATION FOR SEQ ID NO:111:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 46 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

00854816 051504

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:111:

Trp	Met	Gln	Trp	Asp	Arg	Glu	Ile	Ser	Asn	Tyr	Thr	Asp	Thr	Ile
1				5					10					15
Tyr	Arg	Leu	Leu	Glu	Asp	Ser	Gln	Asn	Gln	Gln	Glu	Arg	Asn	Glu
				20				25						30
Lys	Asp	Leu	Leu	Ala	Leu	Asp	Ser	Trp	Lys	Asn	Leu	Trp	Asn	Trp
				35				40						45
Phe														
46														

(2) INFORMATION FOR SEQ ID NO:112:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 46 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:112:

Trp	Met	Glu	Trp	Glu	Arg	Glu	Ile	Asp	Asn	Tyr	Thr	Gly	Leu	Ile
1				5					10					15
Tyr	Ser	Leu	Ile	Glu	Glu	Ser	Gln	Ile	Gln	Gln	Glu	Lys	Asn	Glu
				20				25						30
Lys	Glu	Leu	Leu	Glu	Leu	Asp	Lys	Trp	Ala	Ser	Leu	Trp	Asn	Trp
				35				40						45
Phe														
46														

(2) INFORMATION FOR SEQ ID NO:113:

- (i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 40 amino acids  
(B) TYPE: Amino Acid  
(D) TOPOLOGY: Linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:113:

003416.051  
105150" 9134360

Trp Ile Glu Trp Glu Arg Glu Ile Ser Asn Tyr Thr Asn Gln Ile  
1 5 10 15

Tyr Glu Ile Leu Thr Glu Ser Gln Asn Gln Gln Asp Arg Asn Glu  
20 25 30

Lys Asp Leu Leu Glu Leu Asp Lys Trp Ala  
35 40

Table 1. Demographic characteristics of the study population	
Age (years)	50.0 ± 10.0
Gender	
Male	50.0%
Female	50.0%
Education (years)	12.0 ± 2.0
Marital status	
Married	80.0%
Single	20.0%
Occupation	
Professional	30.0%
Managerial	20.0%
Technical	10.0%
Skilled	20.0%
Unskilled	20.0%
Income (USD/month)	1000.0 ± 500.0
Health status	
Good	70.0%
Fair	20.0%
Poor	10.0%
Smoking status	
Smoker	30.0%
Non-smoker	70.0%
Alcohol consumption	
Regular	10.0%
Occasional	20.0%
Never	70.0%